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THE PRACTITIONER.

THE PRACTITIONER:

A Monthly Journal

OF

THERAPEUTICS.

Edited by

FRANCIS E. ANSTIE, M.D., F.R.C.P.

Senior Assistant Physician to Westminster Hospital, Lecturer on Materia Medica in Westminster Hospital School; and Physician to the Belgrave Hospital for Children.

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JULY, 1869.

Original Communications.

ON THE MODE OF ACTION AND THE USE OF BELLADONNA IN THE TREATMENT OF ASTHMA.

BY M. LE DR. SÉE.

Clinical Professor at the Hôspital de la Charité, Paris; Professor of Therapeutics to the Faculty.

The remedies which are especially efficacious in the treatment of asthma are the *vascular* and *cardiac* agents; *i. e.* those which act either on the heart or on the muscular coat of the vessels; and among them we find three which have been principally applied to the treatment of this disease—belladonna, datura, and hyoscyamus.

Belladonna causes contraction of the muscular fibres of the arteries in such a way as to stimulate the flow of blood in the organs, and assist the functions of the latter, while other vascular remedies, which also affect the muscular coats of the vessels, act in a different manner; *e. g.* nicotine produces a lasting spasm, which only gives place to dilatation when the muscle has become tired out. Bromide of potassium causes a permanent contraction and produces anæmia of the organs, while belladonna produces the opposite state—active congestion.

The classification which I have adopted indicates that the remedies are grouped according to their affinity for the organs which they are destined to modify and to heal.

I anticipate an objection here. How can we prescribe "vascular" remedies to cure a disease which depends not on any vascular affection, but on a disturbance of respiration? The answer is easy. It is necessary to employ vascular remedies, because the means of modifying respiration is to be found in the power to alter the pulmonary circulation. Further, the essential cause of asthma is an exaggerated excitability of the spinal cord, impressions on which provoke the reflex convulsion which constitutes the paroxysm; but belladonna acts upon the vessels of the cord, and diminishes its excitability by making its circulation active. Finally, by causing the pulmonary vessels to contract, belladonna produces congestion of the pulmonary mucous membrane, and helps the bronchial secretions, the expulsion of which is often so difficult in asthma.

Action on Respiration.—In order that nerves may perform their functions normally, they must be supplied with normal blood, rich in oxygen, and not charged with carbonic acid; without this the *nœud vital*, which is endowed with very great susceptibility, functions badly, and it is thus that dyspnœa is so easily produced in chlorotic subjects, whose blood, poor in globules, is not sufficiently charged with oxygen. This condition is especially indispensable to the respiratory nerves, which do not provoke contraction, except upon excitation of the spinal cord through the vagus, the nerve which receives sensory impressions and conveys them to the medulla, where they are transformed into motor impulses to the intercostal muscles and the diaphragm.

What does experimentation teach us on the subject? Section of the vagus does not abolish respiratory movements; the type of respiration changes, but the animal does not succumb. Respiration slackens, but the extent and energy of its movements are increased. If the vagus be *stimulated*, instead of being *divided*, the number of respirations is still not increased; the reverse is the case if it be paralysed. By stimulating this nerve, and by dividing it, we do not, then, suppress breathing, but only set up a different respiratory rhythm, in the same

way, in the paroxysm of asthma, the respiratory rhythm is altered; so that, in treating an asthmatic patient, we must seek a remedy which can change the rhythm to a different type from that which prevails in the paroxysm.

Let us suppose that respiration has its ultimate source in the bulb, and that the moment when the nervous fluid is about to excite the intercostal and respiratory nerves an obstacle occurs; well, the pneumogastric has the power of overcoming that obstacle, and the normal rhythm is preserved from interruption. Remedies which are prescribed with a view to action on the pneumogastric alter the rhythm. The asthmatic patient makes a convulsive inspiration, which is due to tetanic contraction of the inspiratory muscles—the diaphragm, the intercostals, and the auxiliaries. In belladonna and datura we have the means of quickening respiration; the inspirations then cease to be convulsive. Belladonna has the indisputable and direct effect of quickening respiration; and if by giving the asthmatic patient a dose of from 5 to 10 centigrammes (78 to 1.56 grain) of extract of belladonna you can make his breathing quicker, you will benefit him much. This action is proved to occur by the following experiment: Inject atropine into the carotid of a dog, and you will immediately observe acceleration of breathing. At the same time that belladonna increases the number of respirations, it changes their type and diminishes their depth. Belladonna, then, is useful in the first stage of the paroxysm, and especially within the first three or four hours. In the second stage, breathing becomes slower from fatigue of the pneumogastrics, and we have now a renewed indication for the use of belladonna, which will quicken respiration again. It is for this reason that you must not prescribe opiates, as is often done by physicians who are called in during the attack, and will insist on soothing the patient at any cost. Opium acts inversely to belladonna; it diminishes the frequency of breathing, to the damage of the patient.

Action on the Vessels.—Belladonna accelerates the action of the heart. This fact has been demonstrated by Bezold, who showed that if atropine be injected into the blood of an animal, the beats of the heart are sometimes doubled in number. This effect is due to paralysis of the terminal ends of the cardiac

branches of the vagus. This kind of action is of no use to us in the case of asthma, but, on the other hand, it can always help us when there is paralysis of the pneumogastrics and increased depression in the vessels. Belladonna, which makes the circulation more active, gives a new impulse to the blood when it is stagnating in the lungs, and the first effect of this are perceived in the relief of breathing.

Action on the Cord.—Bezold had formulated the following law:—Belladonna possesses the power of paralysing all the organic muscles, and especially the sphincters. But this law is false, for, merely to give one instance, belladonna dilates the pupil, but contracts the organic muscular fibres of the intestines. As to the muscular fibres of the bronchi, to which some have attributed the spasm of asthma, belladonna has no action upon them; besides which there is no need to concern ourselves with those muscles, as it is well understood, at the present day, that they play no part in the production of asthma.

THE SULPHO-CARBOLATES IN THE TREATMENT OF DISEASE.

BY ARTHUR ERNEST SANSOM, M.D. LOND. M.R.C.P.

Physician to the Royal Hospital for Diseases of the Chest, City Road; to the North-Eastern Hospital for Children, &c.

THE relation subsisting between Fermentation and Disease has been long established. The current of modern investigation has greatly tended to show that the phenomena in both instances are due to minute particles, whose vast powers consist in the fact of their possessing vitality. Ordinary ferments and disease-producing ferments have one character in common —*they themselves are endowed with life.*

The practical application of this principle must have an influence on the prevention and on the healing of disease. What can be done towards the arrest of the morbific influence of these agencies, whether without the body or within? As to the first part of the question, we have the testimony of ages to the value of destroying the inoculable stuff or removing the individual from the baneful area. Hence the practice of disinfection. We have now abundant scientific evidence as to the nature of the processes of disinfection; they are those of disintegrating or killing the germs of disease externally to the living organism. To these lowly-endowed beings little things may be fatal. Chemical agencies alter their molecular constitution so that vitality is no longer possible. In the course of an epidemic nature some times permits a series of meteorologic or telluric changes, which arrest the spread by destroying the energy of the organized cause. Every one knows what slight changes will arrest the progress of fermentation. "The occurrence of fermentation," says Professor Miller, "is prevented by the presence of small quantities either of oxide of mercury, of strychnia, or of quinia, as well as by solutions

containing traces of sulphurous acid, or of the sulphites. Small quantities of creasote, of oil of turpentine, and of many essential oils, have a similar effect."[1] Then, speaking of the yeast-cells, he says: "Everything that destroys the vitality of these organized bodies destroys their power of ex-exciting fermentation." Surely this latter observation is sufficient to indicate the essential *rôle* of living things in fermentations. Slight causes may arrest the vitality of lowly-endowed organisms. To take a rather bold example: let there be but a little undue acidity of the maternal fluids, and that embryo will die which in the future under favouring circumstances would develop to the full maturity of manhood.

It being proved that disease-germs are capable of destruction whilst they are outside the individual organism exposed to their influence, the question next occurs, Is it possible to destroy such organized molecules, when once they have entered the living body and have commenced that action which is manifest in the production of phenomena of disease? That such a thing has no *primâ facie* impossibility is shown by the fact that we are frequently employing internal remedies to destroy entozoa having far higher vital endowments. Furthermore we have evidence that the very drugs which we have been accustomed to administer in zymotic diseases have themselves great power as anti-septics or destroyers of germs. I have myself determined experimentally that the fermentation of two fluid drachms of yeast mixed with 25 grains of sugar, and placed in circumstances the most favourable for the process, is wholly arrested by the following:—Liq. hydrargyri bichloridi, half a drachm; tincture of the perchloride of iron, five minims; sulphite of soda, five grains, sulphuric acid, one-tenth of a grain. Fermentation was *almost* wholly arrested by five grains of acetate of lead.

It is obvious that these various agents in arresting fermentation cannot manifest their effects wholly and solely in virtue of their chemical powers. Most of them are admitted to be oxidizing agents. But how totally insufficient must be the quantity of oxygen which the efficient amounts of the various compounds are capable of liberating to chemically alter the oxidizable stuff of the ferment plus the fermentescible matter! Sulphite of soda

[1] Elements of Chemistry, Part III. p. 106.

is a *de*oxidizing agent; its power can be estimated by the quantity of oxygen which is required to convert it into a sulphate; this quantity is less than one-sixth of its weight. Five grains, therefore, of sulphite of soda would absorb considerably less than one grain of oxygen, the merest fraction of the oxidizable matter present in the sugar employed.

When we take into consideration the observed effects of sulphurous acid and the sulphites in arresting the vitality of living things, we must, I contend, conclude that these are far less chemical agents than they are poisons to the low forms of life. When we consider the myriads of germs which a few grains of a sulphite is capable of destroying, we have a *primâ facie* ground for administering them to the individual body which is suffering the decompositions of disease. We find that the administration is attended by no deleterious effects to the higher organism. Moreover, that the salts administered do possess that power of arresting internal decompositions which we have proved them to possess in regard to external fermentations, is established by the fact that if the sulphites be freely administered to a living animal, its tissues after death do not present the phenomena of decay.

These observations as to the mode of action of the sulphites pertain with greatly increased force to carbolic acid. It is proved that a mere trace of carbolic acid kills all the low forms of animal and vegetable life, arrests fermentation, and forbids decomposition. Yet not only is it shown that it exerts scarcely any purely chemical action and interferes with scarcely any purely chemical change,[1] but its elements (C_6 H_6 O) are precisely the same as those upon which it exercises its influence. It seems to be impossible that we can disregard the testimony of the host of observers that have declared to the efficacy of carbolic acid in arresting the spread of disease when employed as a disinfectant. Now if it has, as the able chemists have determined, no appreciable chemical action on decomposition and its products, while it instantly destroys all living germs, we are in this dilemma; either we must agree to the germ theory, or we must acknowledge that the national resources

[1] The Appendix to Third Report of Cattle Plague Commissioners, by Wm. Crookes, F.R.S. p. 191

have been expended, in times of cholera, on a body which is inert and useless.

The internal diseases in which, according to the records of observers, the administration of carbolic acid has been attended with success are the following:—Dyspepsia, diarrhœa, dysentery, cholera, croup, diphtheria, hooping-cough, bronchitis, phthisis, erysipelas, syphilis. In most of these diseases it will probably be acknowledged that various decompositions are taking place within the body, which, according to experience derived from its operation outside the body, we may consider that carbolic acid has an *à priori* likelihood of arresting.

In my opinion, however, experience has shown that there are difficulties, and even dangers, in the administration of carbolic acid. 1. It is of a very nauseous odour and taste, so that, even in extreme dilution, it is difficult of administration, especially to children; 2. its thorough solution in unaccustomed hands is not very easily accomplished; 3. it is a violent irritant of sentient surfaces, so that it can possibly be administered in only small amounts; 4. it has a peculiar caustic action on animal membranes, evidenced by its turning mucous surfaces of a dead white colour; 5. it has a toxic action, producing hyperæmia of the nervous centres; 6. it forms compounds possessing varying modes of action with different organic compounds—with alcohol, glycerine, fats, &c.; so its effects will probably vary not only with the medicinal adjuncts with which it is administered, but with the nature of the contents of the stomach at the time of administration.

The double salts of carbolic acid which I have introduced and whose physical characters, &c., I have described in a paper read before the Royal Medical and Chirurgical Society on March 9th, 1869, will, I think, prove to possess, as remedial agents, the advantages, without the difficulties and dangers, of carbolic acid. These are salts of the double acid, sulpho-carbolic acid.

Sulpho-carbolic Acid (*Syn.* Sulpho-phenic acid, $C_6 H_6 S O_4$) is produced by the admixture in equivalent proportions of sulphuric and carbolic acids. I have obtained the pure double acid in the form of very long, colourless, finely-acicular crystals, which are very deliquescent.

The Sulpho-carbolates are produced by neutralization with

the various bases. I have succeeded, with the help of Messrs. Balmer, in producing fine specimens of the salts of sodium, potassium, ammonium, magnesium, zinc, iron, and copper.

Preparation.—I have found many specimens lacking the true characteristics of a sulpho-carbolate. The danger is contamination with: 1. the sulphate of the base employed; 2. the carbolate which evolves the odour of carbolic acid; 3. free sulphuric acid; 4. free carbolic acid. The best method is to produce first a definite sulpho-carbolic acid by taking equivalent weights of its components, and to neutralize with the calculated weights of the oxides employed. Crystallization should take place slowly without heat.

Tests.—Each sulpho-carbolate should possess a definite and decided crystalline form. They should give off scarcely any odour of carbolic acid; they should give no precipitate with barium chloride. If boiled for some time with strong nitric acid, and then diluted with a little water, a yellow crystalline deposit of picric acid should be thrown down, and the filtrate should give with barium chloride the reaction of sulphuric acid. On a crystal being dissolved in distilled water, and a few drops of solution of perchloride of iron added, a beautiful purple or mauve solution should be produced. I have found $\frac{1}{60}$ grain of sulpho-carbolate of sodium capable of inducing the mauve tinge.

Mode of Action.—It must not be supposed that the sulpho-carbolates are powerful *direct* antiseptics; I am convinced that they are far less powerful than carbolic acid. From experiments which I have made I conclude that, in regard to prevention of fermentation, half a grain of pure carbolic acid is equivalent to twenty grains of sulpho-carbolate of sodium. It may therefore be concluded, that not only is the salt as compared with the acid far less efficient in destroying the life of vegetable cells, but also that the acid loses in this power by its combination with the base; *i.e.* that the same amount of carbolic acid, when free, is equally efficient with nearly twenty times that amount when in combination. The important characteristics, however, of these salts are, in my opinion, (1) that they can be readily administered to the living animal body without difficulty or danger; (2) that *in transitu* throughout the system the carbolic

acid becomes evolved, producing its beneficial effects. When sulpho-carbolate of sodium has been administered to an animal, sulphate of sodium is found in the urine and in the tissues, while carbolic acid escapes with the breath. The flesh of the animal resists post-mortem putrefaction.

By administering sulpho-carbolate we are enabled in effect to administer carbolic acid in an innocuous form, and in a quantity which it would be impossible to employ by other means.

Practical Employment.—The *sulpho-carbolate of zinc* has been chiefly used as an external application in the form of lotion. Mr. John Wood was, I believe, the first thus to employ it. Three to ten grains should be dissolved in an ounce of distilled water. The effect on suppurating surfaces is marked in the arrest of pus-formation and the abolition of all fœtor. Mr. Wood believes with me, that by the influence of the organic constituents of the suppurating surface the sulpho-carbolate is decomposed and carbolic acid is evolved. It is greatly superior to carbolic acid, on account of the absence of irritating qualities, and of all unpleasant odour. I have used it as an injection in gonorrhœa, the discharge of which it at once checks.

For internal administration I have chiefly used the sulpho-carbolate of sodium. This is freely soluble in water, and the solution has scarcely any objectionable taste. Children take the pure salt readily.

Dose.—From repeated trials I convinced myself that doses of from twenty to sixty grains could be readily absorbed. I have now employed it in about 200 cases. In not more than six out of the whole number have any direct contra-indicating effects been produced by the drug. In two cases sickness occurred, in the others a feeling of slight stupor or powerlessness was produced, which passed away in a few minutes.

Use in Phthisis.—In my paper read before the Royal Medical and Chirurgical Society I gave an analysis of thirty-five cases of phthisis, in which I administered sulpho-carbolate of sodium in doses of ℈i to ʒi. I considered this table as proving that the drug could be given for periods averaging two months without the production of any ill effect. On the other hand, there was for the most part a steady gain in nutrition. A further experience has confirmed and increased my belief, that in the sulpho-

carbolate of sodium we have a drug valuable in the treatment of pulmonary phthisis. I do not believe that it has any special power in arresting the progress of tuberculisation. Rapid cases occur over which it appears to have no control whatever; but over the accidents of tuberculhæmia it seems to me to exercise a benignant influence. Under the treatment, I have found in many cases strength increased, rest improved, fœtor of expectoration arrested, night sweats removed, and appetite increased. I have made an analysis of fifty-two cases treated by the sulphocarbolate. These include ten in the *first stage* of the disease; eight of which manifested decided improvement. In one case the local signs disappeared; one gained in weight 2½ lbs. in three weeks; another, 2 lbs. in six weeks; a third, 6 lbs. in five weeks; and a fourth, after manifesting great improvement, left off all treatment, and on my observing him three months afterwards, he had gained 9 lbs. On the other hand, one case manifested sickness and progressive loss of weight, and the drug was discontinued; and the signs in another case were doubtful.

In the *second stage* I observed thirty-one cases. Twenty-four testified to considerable improvement, for the most part manifest in increased strength and energy. A gained 1 lb. in a fortnight; B, 1 lb. in six days; C, 3½ lbs. in a month; D, 1 lb. in two months; E, 3 lbs. in three months; F, 8 lbs. in two months; G, 2 lbs. in three weeks. In one case in which the temperature was carefully noted it fell from an almost constant 97·6° Fahr. to an almost constant 95·6° Fahr. On the other hand, in one case which at first manifested improvement the disease quickly progressed; the same happened in a second case, who attributed his symptoms to domestic trouble. One case rapidly went from bad to worse, and in six there was no improvement.

In the *third stage* I noted eleven cases. One case rapidly improved, the patient expressing himself as "feeling a different man." One gained 2 lbs. in a fortnight, and on observation two months after had further gained 2½ lbs.; another gained 2¾ lbs. in two months; four testified to feeling increase of strength. Three, however, showed no influence exerted over the fatal course of the disease, and two were doubtful. Altogether I conclude that but very little good is done by the drug in the third stage of the disease, but enough evidence exists

to warrant that it may exercise a beneficial influence over the conditions in the first and second stages.

My experience of the use of sulpho-carbolate of sodium in *zymotic diseases* is unexceptionably favourable. During twelve months I have administered it in every severe case which has fallen under my observation. I have not had one fatal result. I have, however, always strenuously endeavoured to guard against a prematurely uttered conclusion. I only hope for a fair and impartial trial of the mode of treatment by my professional brethren.

Severe Tonsillar Ulceration.—I employed the treatment in five cases, which all rapidly recovered without the occurrence of suppuration. The first case in which I thus employed it was that of Mr. H——, to whom I was called by a message expressive of great urgency, on December 4, 1867. I found the patient suffering extreme pain and inability to swallow, salivation, voice greatly impaired; pulse 120, and much febrile excitement. He had been my patient the previous year with similar symptoms, though of less severity. There then occurred much suppuration, and the patient was confined to his home for about a fortnight. This time, anticipating a similar history, I counselled absolute rest, demulcent drinks, and half a drachm of sulpho-carbolate of sodium in solution every four hours. I arranged to call the day but one following; on doing so I found to my surprise that my patient had gone to his business. He subsequently called on me professing himself quite well; the ulcerated tonsils were cicatrising. All the other cases recovered uninterruptedly. Of course such results may have been fortuitous, but they were strangely different from those of my former experience, and I now never hesitate to use the sulpho-carbolate in analogous cases.

In a case of *diphtheria* with abundant false membrane I administered the sulpho-carbolate of potassium. Perfect recovery took place; but as brandy and beef-tea were assiduously administered, I should hesitate to attribute to the sulpho-carbolate the chief share of the success.

I employed the sulpho-carbolate of sodium in five severe cases of *scarlet fever*. In one of these cases the thermometer

in the axilla indicated 105° F., in another 103° F.; in the former there was slight albuminuria on one day, which disappeared the day following; on the twelfth day of the fever the temperature had fallen to 93·2°. Recovery was perfect, rapid, and uncomplicated. In another case, though there were on the two first days severe throat-signs, a universal rash, and subsequently the most perfect desquamation, there was so little *malaise* that the patient, a little girl, was dressed each day and continued her play as if in health. All the cases recovered in a less period of time than under any treatment which I have previously employed in similar cases.

I employed the sulpho-carbolate of sodium in two case of facial *erysipelas*. Both evidenced extreme febrile symptoms. I had only a single opportunity of using it in *variola;* the patient, a middle-aged gentleman, had been vaccinated in childhood; he recovered rapidly.

It is only in the hope that my professional brethren will give the plan of treatment a trial that I record these few imperfect observations. Individual experience may indicate a possible solution of certain of the therapeutic problems presented by these diseases, but it can never pretend to anything approaching rigid scientific accuracy. The zymotic poisons differ not only in themselves, but in the secondary conditions which they induce; and a treatment successful in the case of one may be unsuccessful in the cases of others. I believe that almost every day we are accumulating data which tend to the illucidation of their nature and history. The practical problems of the too much neglected art and science of therapeutics are only to be solved by the study of the results of accumulated individual observations, and by organized experience.

ON THE MEDICINAL USE OF PHOSPHORUS AND ITS COMPOUNDS.

BY JOHN C. THOROWGOOD, M.D.

Senior Assistant Physician to the Hospital for Diseases of the Chest, Victoria Park.

Since the discovery and isolation of the element phosphorus by Brandt, of Hamburgh, in 1669, it has become the practice with physicians in this and other countries, occasionally to prescribe this substance as a remedy in cases where some special stimulant to the nervous centres, has seemed to be required. Thus we find that phosphorus has been administered in cases attended with great prostration of the vital powers, as in the latter stages of typhus fever, also in such chronic diseases of the nervous system as epilepsy, paralysis, melancholia, amaurosis, &c., occurring in debilitated subjects; and there is good evidence to show that in many of these nervous affections the effect of phosphorus, properly administered, has been decidedly beneficial.

It is hardly necessary to remind the reader how largely the compounds of phosphorus enter into the composition of the juices and tissues of the animal system generally; while, specially, in brain and nerve tissue are found certain phosphorised fats which appear to contain phosphorus in considerable proportion at a low degree of oxidation, so that the accurate analysis of these phosphorised fats of the nerve tissue has always been a matter of difficulty to the chemist, since the necessary processes of analysis almost inevitably raise the phosphorus to a higher degree of oxidation, and so bring it under the analyst's notice as phosphoric acid—free, or combined with an alkaline or earthy base. According to the experiments of

Gobley, subsequently confirmed by those of Lehmann, an acid phosphate of glycerine has been demonstrated in softened brain substance; and Von Bibra has proved the existence of phosphorus itself in the fatty matters of the brain in the proportion of from 1·5 to 1·9 per cent. There appears to be more phosphorus in the grey than in the white substance of the brain, but as yet no connexion has been traced between individual intelligence and amount of phosphorus contained in the brain substance.

The well-known fact that in cases where an unusual degree of wear and tear of the nervous system is being sustained it is common to find an excess of phosphatic matter excreted in the urine, while the individual becomes increasingly weak, nervous, and irritable, appeârs to show that exhaustion of nervous force is in some way connected with a rapid oxidation and excretion of phosphorus from the system.

Considering these points, we can see that there is reason in seeking to administer phosphorus as an internal medicine where we have reason to suspect that the nutrition of nervous matter may be failing from a loss of its right proportion of this very essential ingredient.

We give phosphorus for its restorative action over weak nerve, just as we give iron to nourish and restore blood that is weak and poor from lack of this constituent. A difficulty and objection in the medicinal use of phosphorus has hitherto been the finding of an eligible and convenient preparation in which to enable the stomach to bear and digest the drug; for when the phosphorus is given dissolved in oil, or in ether, it forms a very nauseous mixture, which after a while appears to heat and irritate the stomach. Some practitioners persuade themselves that they are nourishing the brain and restoring the nerves if they administer phosphoric acid and various of the phosphatic syrups, now so much in vogue, to their patients. Few will deny that often much good is done by these preparations of oxidised phosphorus, but it seems doubtful if the restorative action of phosphorus, thus given in a state of complete oxidation, over nerve tissue is equal to its action when given in a lower degree of oxidation, either as pure phosphorus itself, or else combined in the form of a hypophosphite; a salt which contains phos-

phorus at so low a degree of oxidation that it will ignite and burn at a moderate heat just as pure phosphorus would do.

Solid phosphorus, given in as small a dose as 1½ grain, acts as a poison, death seeming to take place in a gradual and painless way, with perfect retention of consciousness. There may be some vomiting, and the substances ejected appear luminous in the dark, as also does the stomach itself after death, when cut open in a dark place; but it is rare to find any marked inflammation of this organ: in the case of a bird poisoned by eating several grains of phosphorus, I could find scarcely a trace of inflammation anywhere in the digestive tract. In a case recorded by Casper, where a dose of 3 grains of phosphorus proved fatal to a lady in twelve hours, the body after death presented the extraordinary phenomenon of luminous vapour issuing from each of its outlets.

Analysis of the various tissues of animals poisoned by phosphorus has demonstrated the presence of phosphoric acid in unusual amount: this arises from the oxidation of the phosphorus in the body. Phosphoric acid is also increased in the urine of those who have taken any preparation of phosphorus. The action of phosphorus as a poison appears not to be due to any direct action on the nervous system, but to its preventing the assimilation of oxygen by the constituents of the blood; by thus checking oxidation it may cause the fatty degeneration of the liver so often met with in those who have been poisoned by phosphorus, and which is doubtless connected with the symptoms of severe icterus often seen in the patients before death.

For medicinal use there are solutions of phosphorus in ether and also in almond oil. One fluid ounce of ether will dissolve, after long digestion, 4 grains of phosphorus, and the oily solution is in the same proportion. The most recent formula for the phosphorated oil is that of the French Codex, for which I am indebted to Mr. C. Savory; it is as follows:

Form from French Codex for Phosphorated Oil.

Phosphorus, 2 grammes.
Oil of almonds, 100 grammes.

The oil is gently warmed with the phosphorus for about

twenty minutes in a flask that is almost closed to exclude the air; when cool the oil is decanted off from the undissolved phosphorus.

The oil, thus prepared, may be given in emulsion, or with cod-liver oil in a dose of from 3 to 8 drops, like the phosphorated oil of the Prussian Pharmacopœia, and is hardly less nauseous in flavour.

Another very useful preparation of phosphorus is a pill, made by melting finely-divided phosphorus with fat and then covering the pill with an impermeable coating.

Pills that I have seen and used, made by Messrs. Savory and Moore, contain $\frac{1}{10}$th of a grain of phosphorus in each pill. Both Dr. Radcliffe and Dr. Althaus speak favourably of the good effect of phosphorus, given thus in very small doses, as a valuable tonic in many chronic nervous maladies.

Some years ago the phosphorated oil was tried by Dr. Hughes Bennett in several cases of paralysis; but though the dose was a full one, the medicine had not much perceptible effect beyond causing a great increase in the quantity of phosphoric acid excreted by the urine.

A further, and more recent, trial of phosphorated oil has been instituted by Delpech, of Paris, in cases of paralysis, and he has found reason to speak well of phosphorus as a useful medicine in these cases; it seems to invigorate the system and so act as a tonic. It was thus that Dr. Anstie found phosphorus to act beneficially[1] as a tonic in cases of epilepsy; over the actual fits the drug did not seem to have much power, but it relieved the languor and depression felt in the intervals of the fit in a very satisfactory way.

M. Tavignot, in France, has long been in the habit of using phosphorus in the form of a pill, containing $\frac{1}{10}$th of a grain as a remedy in nervous, chlorotic, and strumous affections. In some neurotic and paralytic affections of the muscles of the eyeball, and of the lachrymal nerve, M. Tavignot has used liniments of phosphorated oil with advantage; and, dropped into the eye, this oil is asserted after some months' use to have a solvent action on cataract.

[1] Med. Times and Gazette, April, 1862.

The oil here used is made by dissolving 10 centigrammes of phosphorus in 30 grammes of the oil of sweet almonds by the aid of a water bath.

According to the *American Medical Journal* for January, 1869, Drs. Du Jardin and Beaumetz have met with good results in the treatment of progressive locomotor ataxy with the phosphorated oil, given in capsules, each one of which contains one milligramme ($\frac{1}{10}$th grain) of phosphorus. These observers think that the phosphorus checks the excessive proliferation of connective tissue in the spinal cord, which produces varicosity of the nerve tubules and all the morbid effects observed in locomotor ataxy.

The observations of M. Ranvier confirm the foregoing. M. Ranvier believes that phosphorus takes away formative irritation and opposes the multiplication of the cell elements of the connective tissue; its local action is very slight, and it scarcely affects either the temperature or the pulse; it nourishes nerve much in the same way as iron nourishes weak blood. To me these remarks on the tendency of phosphorus to check undue production of the cell elements of the connective tissue seem both interesting and important, for they may explain the beneficial effect of phosphorus in some diseases which are not directly to be classed as nervous affections. I have before me records of some cases of pulmonary disease where the action of phosphorus has been very marked. One case was that of a lady, aged 43 years, who, ever since she caught cold two years previously, has been liable to cough with harsh and difficult breathing and all the symptoms of chronic bronchitis, without apparently much emphysema of the lung. Many and varied were the remedies used in this case with no very marked benefit, until a phosphorus pill ($\frac{1}{10}$th grain) was given twice a day; and from this pill more real benefit was received than from any other remedy, the respiration becoming easy and free from sonorous râle, and the patient recovering sufficiently to need no further medical aid.

In numerous other cases of chronic pulmonary disease, in which there seemed no special reason to think that tubercles were actually present, I have administered phosphorus in the form of the hypophosphite of potash with excellent results.

This hypophosphite of potash is a deliquescent salt, very rich in phosphorus, taking fire and burning at a very low temperature, and possessing a resolving and liquefacient action so strongly marked that I have known great mischief to result from its incautious administration to persons affected with tubercular deposit in the lung. A highly intelligent surgeon near London told me some time ago that he feared ever again to give the hypophosphite of *soda* to one who had tubercular disease, for he was sure that in the instance of a medical man, for whom he had prescribed this salt, it caused a rapid softening of the tubercular deposit. I said I could believe this easily if he had given his friend the hypophosphite of *potash*, but I doubted its happening when the soda salt was used in a moderate dose. To make certain on this important point we went to the surgery, and the bottle containing the remainder of the salt was hunted out from the obscurity to which it had been consigned: it proved to be a bottle of good and genuine hypophosphite of *potash* as I had suspected.

In the case of a patient under my care at the Victoria Park Hospital for obstinate chronic bronchitis with thick fetid expectoration and tendency to congestion of the lung, 5 grains of the hypophosphite of potash in camphor water effected a complete cure without any other medication whatever. To test the effect of the treatment I stopped the medicine during one week, and the effect was a marked increase of cough and thick fetid expectoration; on returning again to the mixture these symptoms were entirely removed and the patient was dismissed cured.

In other cases of chronic bronchitis, remaining after the subsidence of an acute attack of the disease, and not, as a rule, complicated by the presence of emphysema of the lung, I have given the hypophosphite of potash in camphor water with much advantage.

As a gradual tonic and restorer of failing nerve force I prefer the hypophosphite of soda or of lime to the potash salt, and either of these salts appears to me to answer all the purposes of pure phosphorus as an internal remedy, while at the same time they are more manageable and agreeable medicines. In cases of nervous depression and torpor, with at times shooting neuralgic

pains; or, in other cases, numbness and deadness of the limbs, as from feeble circulation; the hypophosphites prove useful, and the lime or soda salt can be given according to the way in which the stomach may seem to bear the one better than the other. When anæmia is present, the citrate of iron can be added to the hypophosphite of soda, or else the syrup of the hypophosphite of iron, or of iron with quinine, can be employed; and either of these syrups will prove an active tonic, removing neuralgic pains, chest oppression, and languor of circulation in a very evident way.

In cases of pure hypochondriasis, with tendency to true melancholia, I have used the hypophosphite of soda in full doses, but have not found it to exercise the least effect over this form of depression, while from very small doses of strychnine the patient obtained most unmistakeable relief. I have noted in other cases that, where a depressed state of system was connected with any obvious form of dyspepsia, the hypophosphites were of very little benefit. Among other cases in which I have tried phosphorus in the form of either the hypophosphite of lime or soda, I may enumerate two cases of psoriasis of the skin in which the action of the drug was strikingly beneficial. I have tried the hypophosphite of lime in a very obstinate case of acne, but here it failed to relieve, though subsequently the sulphur water of Harrogate proved eminently useful. In numerous cases of phthisis pulmonalis I have administered various hypophosphites, with a view to increasing and restoring wasted nerve force; in an exhausted state of which I believe many cases of true tubercolosis to have their origin. Such experience as I have had leads me to think, with some others who have made careful trial of the hypophosphites in phthisis, that these salts are certainly to be regarded as valuable remedial agents in the treatment of this disease, especially in its premonitory and early stages.

CONTRIBUTIONS TO OPHTHALMIC THERAPEUTICS.

BY ROBERT BRUDENELL CARTER, F.R.C.S.

HINTS ON THE TREATMENT OF IRITIS.

Iritis is one of the few forms of disease in which it is never sufficient that the surgeon should watch over a recovery, but in which he is always called upon to endeavour to effect a cure. Recovery, or what passes for recovery will take place in the great majority of instances, but such recovery leaves behind it the fruitful seeds of subsequent and eventually destructive changes. I speak from an experience gained chiefly in provincial ophthalmic hospitals, when I say that iritis which has not been cured, but in which a so-called recovery has taken place, is very prominent among the actual causes of blindness. Not always a very severe, or painful, or long-continued form of ophthalmia, there are probably many cases of its occurrence in which medical aid is not sought at all. People say they have had "a cold in the eyes," but that it soon got better; and even when medical aid has been sought, the result is not always everything that could be desired. A large number of practitioners still go into the world from schools of medicine at which ophthalmic teaching is conspicuous by its absence; and the effects of this absence are seldom more clearly displayed than by patients in whom iritis has been either overlooked or maltreated. Maltreatment mostly takes the direction of some irritating application to the conjunctiva—such as sulphate of copper or nitrate of silver—and the usual result is, that the whole of the inner circle of the iris becomes adherent to the anterior capsule; the outer circle will then be projected forward by the increase and accumulation of fluid behind it, and the

retina will be subjected to continually increasing pressure, until the case at last terminates (unless partially relieved by a sufficient iridectomy) in total blindness and wasting of the eyeball. When no irritants are employed, and the treatment is only faulty in respect of omissions, the worst ordinary result of a first attack is the formation of one or two points of adhesion. The aqueous humour recovers its clearness, the iris its natural aspect, the pupil, to all appearance, its circular outline, and the vision is restored; but if a drop of solution of atropine be applied, the pupil will be circular no longer; as it dilates, it may seem to be tied down to the anterior capsule at one or two points, and instead of becoming a larger circle, it assumes a shape more or less like that of club on a playing card. The adhesions are formed by effused lymph, possessing the usual contractility of organizable inflammatory deposits. Sooner or later, by their contraction, or by the mere irritation produced by their presence, or by rendering the iris the *pars minoris resistantiæ* when the health is deranged by some constitutional cause, they set up a second attack of iritis. In this, probably, a thin layer of lymph will be effused over the pupillary area, and formed into a delicate membranous film, rendering the vision indistinct. A third attack will soon follow the second, and the ultimate result will be much the same as in the cases in which the first attack has run a destructive course. At eye hospitals patients constantly present themselves at every stage of the process thus briefly sketched out, and their condition, although admitting of amelioration, is seldom susceptible of cure. There are few matters of more practical importance, than so to manage the original disease that these dreary consequences may not result from it.

A first attack of iritis generally depends upon mechanical injury, upon rheumatism, or upon syphilis—but, with certain exceptions, I am disposed to believe that the rheumatic or syphilitic forms are not specific; that is to say, that they are not rheumatic or syphilitic diseases of the iris, but that the blood poison, like an injury, acts as a direct irritant to the nerves of the organ, and produces a "common" form of inflammation. I rest this impression partly upon the admitted impossibility of determining, by anything in the symptoms, in its course, or its amenability to treatment, whether a given attack of ordinary

iritis be syphilitic or not, and partly upon an opportunity lately afforded me of observing (for the first time) the absolute commencement of the disease. Iritis is scarcely ever seen by the surgeon until it is declared. Mr. Haynes Walton has mentioned impairment of vision as an early symptom, and as one that should lead us carefully to scrutinize the iris in cases of supposed conjunctivitis. Dr. Rudolph Schirmer has lately claimed originality for the suggestion that a diminished lustre of the external surface of the membrane is the earliest appreciable symptom; and Dr. Wecker has since shown that to this he had himself called attention. A few months ago, however, I was summoned to a gentleman, who had awakened the same morning with some uneasiness in one of his eyes. There was just so much congestion of the conjunctiva as might be due to the fact that the uneasiness had induced him occasionally to rub the closed lids with his fingers. Vision was perfect. The aqueous humour was clear, and the lustre of the iris unimpaired. Besides the uneasiness, the only symptom present was contraction of the pupil, its diameter not being more than two-thirds of that of its fellow. The contraction naturally suggested the employment of atropine; but the pupil resisted atropine. A strong solution, freely applied, had produced, after the lapse of two hours, only a small amount of dilatation: there was, therefore, a spasmodic contraction of the sphincter pupillæ, due, it may be presumed, to the reflex of some nervous irritation. Within twenty-four hours general parenchymatous iritis of the most severe form had declared itself, and presented the ordinary symptoms.

In the inflamed iris, as in every other diseased organ, we must recognize the presence of a variable degree of recuperative energy; by which the progress of the malady is resisted, and by which the injuries wrought by it are repaired. We must also admit that the morbific force necessarily differs in different cases not only in the severity of its first impact, but also in the persistence of its action; and the differences thus indicated are sufficient to account for all the phenomena ordinarily witnessed in the disease. We see some instances in which the opposing morbific and recuperative forces are so nearly balanced, that a very little interference from the surgeon turns the scale in

favour of the latter; and we see other instances, in which the morbific force so much preponderates, that very energetic treatment is absolutely required. The slightest cases of iritis are those that follow a simple mechanical injury of not too profound a character; the most severe follow injuries that act continuously —as when a foreign body is lodged within the eye, or when lens matter is broken up, or as in the insiduous and destructive forms that mark the commencement of sympathetic ophthalmia, and that are produced by some source of permanent irritation acting on the ciliary nerves of the other eye. Sympathetic ophthalmia, indeed, appears to me strongly to confirm the opinion I have expressed with regard to the nervous origin of iritis. Intermediate degrees of severity are seen in the so-called rheumatic and syphilitic cases; and perhaps the most grave of these occur in rheumatic patients, in whom the rheumatism itself is imperfectly treated, or in whom the vitiation of the blood, consequent upon tardy and imperfect action of excretory organs, does not receive a proper amount of attention. But the variations in degree may probably always be referred to the varying relations between the two chief factors of the case; that is, between the intensity and persistence of the cause and the reparative power of the patient. In every instance, therefore, an attempt to estimate the values of these factors must form the basis of rational treatment.

In actual practice, however, iritis is not unfrequently overlooked, and it may be well, before speaking of its cure, to lay down a simple rule for its detection. That rule is, that being one of the most important forms of ocular inflammation, it should always be present to the mind of the surgeon, *and should always be looked for in an inflamed eye.* If there, and if looked for, it cannot fail to be found. Something will depend, of course, on the way of looking, and the first precaution necessary is to have a good light, so placed that the iris and pupil are not concealed or obscured by reflections from the cornea. From want of attention to this simple point, I have seen an error made by a very skilful and experienced ophthalmic surgeon. The patient being rightly placed, and the sound eye closed, the shadow of the surgeon's hand should be made to fall upon the affected eye, and to leave it suddenly, two or three times in

succession. If the pupil dilate and contract quickly, all is well; if its movements are slow and uncertain, or restrained at any point of its circumference, atropine should be applied, and then iritis, if present, will be shown by irregularity of the shape of the dilated pupil, or even by its resisting dilatation.

It is possible that some might be in danger of mistaking acute glaucoma for iritis; but this error may always be avoided, by remembering that acute glaucoma is the only inflammatory disease of the eye in which the pupil is found dilated. Exception may, perhaps, be made with regard to cases that resemble glaucoma in their immediate cause; namely, the inflammations that are due to the increased tension produced by a growing intraocular tumour.

The disease once recognized, we are brought fairly face to face with the question of treatment; and, in the first instance, with the question whether there is still in operation any cause that can be speedily removed. An impacted foreign body, ciliary irritation propagated from the other eye, and the imperfect excretion connected with the lithic diathesis, are among the causes of this kind that are most probable, and that should be sought for. The two first would require, when practicable, to be removed by surgical operation, and the last by such eliminative medicines as the case might demand.

In the meanwhile the presence of the effect must not be forgotten. Even when clearly depending upon constitutional causes, iritis must not be left to the unaided operation of remedies calculated to remove those causes. The inflammation affects an organ so delicate and important, and may produce so much permanent mischief in a short space of time, that it must be subdued as speedily as possible by the aid of local treatment. For this purpose atropine is the chief agent. A solution of the neutral sulphate in distilled water, of the strength of from two to four grains to the ounce, must be dropped into the eye, at first at short intervals, as every hour, and when dilatation is produced, or in case the pupil after a few applications still resists dilatation, about twice or three times a day. Dr. Heymann, of Dresden, has advised, in severe cases, the application of a particle of solid atropia or of its sulphate to the tarsal conjunctiva, as being more certain and powerful in its action

than any solution; and in some instances I have followed this practice with advantage. The precise method of application is, however, a matter of small importance, and the point to bear in mind is, that the use of atropine, in every case of iritis, whatever else may be done or left undone, is the one thing that should never be omitted at the commencement of the treatment.

It was at one time supposed by many, or even generally, that the chief value of atropine depended upon its power to dilate the pupil. There can be no doubt of the great importance of this mode of its action, by which the pupillary area becomes so much expanded, that, as a mere question of quantity, it is with difficulty blocked up by effused lymph, and by which any adhesions that have been formed are stretched and weakened, and thus placed under conditions favourable to their detachment and absorption. But in the most severe cases atropine does not begin to dilate the pupil until the inflammation has first been in some degree subdued, or has subsided; and yet, in these very cases, its beneficial influence is, perhaps, even greater than in others. I should explain this influence in few words, by saying that, besides having some not very pronounced action as a sedative, and besides diminishing hyperæmia by producing some contraction of the blood-vessels, it secures rest to the parts within the eye. In treating the ophthalmiæ generally, we perhaps hardly reflect sufficiently upon the ceaseless movements of the structures with which we have to deal. The recent researches of Hensen and Voelckers, besides those of other observers, have shown that the choroid, as a whole, is perceptibly shifted to and fro by the action of the muscle of accommodation; while the size of the pupil, and probably, also, the amount of blood in the iris, vary not only with every adjustment of the eye for distance, but with every slight variation in the amount of incident light. These changes, moreover, take place simultaneously in both eyes, under the influence of impressions acting upon a single one only; and hence, in monocular iritis, every visual sensation experienced by the sound eye, and every variation in the amount of light received by it, even such as are dependent on the momentary withdrawal and replacement of a shading hand, or upon the momentary direction of the face towards a more or less lighted portion of the room, are attended

by dragging and movement of the parts that are inflamed. Although inflammation may, and often does, affect the iris alone, yet there are many instances in which it spreads from this to other structures, and produces most disastrous effects. The importance of absolute rest in preventing such extension, and the liability of ceaseless movement to favour it, are both so obvious, that it is needless further to dwell upon them, and (since atropine produces temporary paralysis of all the parts concerned in these movements) they furnish, to my perception, at once the most rational explanation of its value and the most cogent reasons for its sedulous employment.

To this employment, however, certain impediments sometimes present themselves. Cases of dangerous poisoning have been recorded, in which it appeared that the freely-used solution forced its way through the lacrymal and nassal passages to the pharynx. Dr. Liebreich has even proposed to obviate this danger, by using an instrument to maintain eversion of the puncta during the instillation: but it is difficult to believe that any risk could really occur, unless in consequence of an excessive use of the drug in the case of a patient possessing a very unusual susceptibility to its influence. The possibility of such a coincidence of events should not be lost sight of, but the prospect need have little influence upon daily practice. A more serious difficulty arises, when the atropine acts as a local irritant. It does so in some degree, not very infrequently, where its use has been long continued; and the explanation is, I believe, that the solution, when given into the custody of patients, often loses its neutrality, or undergoes other changes, from keeping and from exposure to sunlight. Irritation excited by a vitiated solution will sometimes be maintained by any other, and I have repeatedly seen drops taken from the same bottle, on the same day, prove irritating to one or two eyes, and innocuous to others. But, practically, this difficulty has little bearing upon iritis, in which the prolonged use of the drug is not often needed, and more frequently presents itself in the various non-inflammatory affections for which atropine is required. I have, however, met with two patients, in both of whom not only atropine, but any preparation of belladonna, acted as a violent local irritant, producing erysipelatous inflammation of the eyelids and cheek, and

greatly aggravating the original disease for which it was prescribed. One of these patients had a soft cataract that I attempted to dissolve; the other suffered from recurrent iritis. In both, after the use of the ordinary solution had been abandoned, an ointment of atropine, and then a softened extract of belladonna, were at different times applied to the skin of the lids and orbital region, but always with the same result. In such cases the surgeon has no alternative but to abandon an agent that can no longer be beneficial; but such cases are fortunately far too rare in any way to modify our ordinary course of action.

In a certain proportion of cases the use of atropine, and the observance of obvious precautions to guard the eye against hurtful influences (such as exertion, light, heat, or the congestion caused by stooping postures or muscular efforts), will suffice to effect a cure. Unless there be acute pain, and when the case is seen early and the patient is in comfortable circumstances, atropine and rest may always be regarded as the essentials of the first prescription. Mr. Teale, in a very valuable contribution to the fifth volume of the Ophthalmic Hospital Reports, has laid down the rule that we may always trust to atropine for twenty-four or forty-eight hours; and that then, if it fails to dilate the pupil, we must have recourse to mercury. The breadth and simplicity of this precept are points much in its favour; and perhaps there are few "rules" that might be regarded as more worthy of confidence and general application. But the use of rules in practice is objectionable, and tends to fetter the mental operations of those who submit to them. I am disposed to think that the principle underlying this particular rule admits of more general statement; and that it will then be of universal applicability. It seems to be, in effect, that the employment of the resources of our art should be in exact proportion to the severity and to the obstinacy of the disease. We test these hostile elements by atropine and rest; or, in other words, by artificially induced stillness of the inflamed parts, and by secluding them from hurtful external influences. We thus often succeed in turning the scale in favour of recovery; and the disease terminates by what may almost be called spontaneous resolution—the treatment having been nothing more than the suspension of hurtful conditions of movement and of stimulation. Frequently

it happens that the mere suspension of these conditions is not enough. Some cause of morbid action is still in operation, and must be neutralized or removed. Sometimes hyperæmia is a prominent feature of the case; and the application of one or two leeches near the eye will then usually allow the atropine to exert its peculiar property. Sometimes the aqueous humour is coarsely contaminated by effused products, or possibly by the *materies morbi* of rheumatism; and it is then that paracentesis of the anterior chamber appears to be especially indicated. But, in the great majority of obstinate cases, there is pain enough to constitute a marked feature of the disease. As long as there is pain there will be no improvement; and I am strongly of opinion that this pain is commonly merely a symptom of the persistence of the cause of this nervous irritation in which, as I have said, I believe that iritis has its origin. I hold it to be a principle that the pain of iritis must always be subdued by anodynes; not merely mitigated, but absolutely mastered. If there be no pain, no anodyne will be needed. If there be only "uneasiness," a moderate dose at bedtime may be sufficient. If pain be severe, opium or some of its preparations should be measured only by their effects—given hour after hour until the pain is no longer felt, and then continued at whatever intervals may be sufficient to keep it in abeyance. Mr. Zachariah Laurence has published reports of several cases of iritis treated successfully by opium pushed almost to narcotism; but I think the secret of his success was simply the removal of pain, and that this result (for which small doses will often suffice) is both the explanation of the *modus operandi* and the test of the quantity that should be administered. The preparation employed is a matter of little consequence. For the sake of rapidity of action, it is often well to commence by injecting a full dose of morphia under the skin of the temple; and pills of soft opium afford a manageable means of continuing the effect.

When all hitherto described has been carried out, there will still remain cases in which, notwithstanding the use of atropine, the relief of congestion, and the subjugation of pain, the pupil does not dilate, and vision either deteriorates or at least does not improve. In these cases it is found, as a mere matter of fact, that mercury, given rapidly, but discreetly, until the gums show

some slight sign of its constitutional effect, will immediately break the chain of morbid action. From the very day on which the mercurial line becomes apparent the sensations of the patient are relieved, and the symptoms of inflammation decline. I am not prepared to discuss, at least in the space accorded to me here, the mode of action of mercury in iritis; but I may say that I think its effect is quite as declared in the traumatic or in the rheumatic forms as in the syphilitic, and that the indication for its use is to be sought entirely in the severity or obstinacy of the attack, and not at all in the cause by which it was excited.

According to many practitioners, the administration of mercury by the mouth is injurious to appetite, and impairs the strength of the patient at a time when his reparative power is most needed. Hence Mr. Teale recommends inunction, and keeps the patient in bed for the purpose of promoting absorption. On the Continent, on a similar plea, the hypodermic injection of a solution of the bichloride has been employed. I cannot say that my own experience has confirmed these views, or has exhibited to me any of the ill effects that have been described. I am accustomed to use blue pills, and find them both efficacious and manageable. Two or three grains, with opium, given three times a day for one, two, or three days, according to the strength and condition of the patient, then followed by diminished doses until the gums show a sign of action, and then by one small dose daily until the condition of the eye is so much improved as to render relapse improbable, is the mode of administration that I have been accustomed to pursue. I have read and heard that the line on the gums need not be produced, and that all the good effects of mercury on iritis may be obtained without it; but on this point I must confess to some incredulity. I have seen one remarkable case of resistance to mercurial action, in which very large and frequent doses were at last employed, and in which the improvement of the iritis dated only from the day on which the line showed that the resistance was overcome. The condition once known as "salivation," and now rarely seen except as a result of accident or of idiosyncrasy, can never be useful, and should never be produced designedly.

Feeling perfect confidence in asserting, as a matter of fact, that mercury does literally "cure" the most severe forms of

iritis, and that it cures them quickly and completely, I have little sympathy with those who denounce its employment. The argument is advanced by some that mercury must do either "good" or "harm;" that if a case will by any means get well without it, it must be surperfluous; and that if superfluous, it must be hurtful. This argument is a congeries of fallacies. We are entitled to assume that the effect of mercury is to modify the nutritive processes; and we have not a tittle of evidence that this modification is other than temporary. If only temporary, it cannot be said to do "harm" in any proper sense of the word. Mecurial poisoning may, of course, be permanently injurious; but enlightened surgeons stop short of mecurial poisoning. I have treated many cases of iritis by mercury, and have had many of the patients so treated within my observation for several years. I have never seen, in any one of them, a single subsequent symptom which the most vivid imagination could connect with any "harmful" effect of the treatment; and I altogether disbelieve that the proper use of mercurial remedies is a course to be in any way deprecated or avoided. In a large number of cases they may be dispensed with as being unnecessarily powerful. In a large number they are, I believe, necessary to the cure; and in the intermediate conditions, where it is questionable whether the word "necessary" could be used, I should feel that I gave the patient the benefit of the doubt by administering mercury, not by withholding it. The surgeons who refuse to give it appear to me to diminish our resources without adding to our success.

In considering the practical question, how long iritis should be treated by less potent remedies than mercury? time is not the only element that should be taken into account. In private patients comfortably circumstanced, or in-patients at a hospital, no great amount of mischief will be done by delay. If the disease be stationary under the influence of atropine, or of atropine and opium, we may safely wait two, three, four, or more days, in the expectation of a favourable change. But if the cornea should become turbid, either interstitially or upon its inner surface, if vision should become daily more and more impaired, or if there should be tenderness on pressure upon the eyeball a little outside of the corneal margin, these are indica-

tions that no more time should be lost, but that mercury should be pushed to the curative point forthwith. As a rule, however, it is quite unnecessary to admit a patient with iritis into hospital; and it is always proper, in the case of a poor man, to aim as much at rapidity of cure as at permanence. For an out-patient, therefore, I do not think it right to wait until his second visit, three days after the first, before laying the foundation of a treatment that may possibly be eventually required. Besides atropine, I give him as much opium as his condition seems to need, and small doses of mercury. In three days the mercury has had no evident constitutional effect; and it is discontinued if the eye is better, increased and pushed if the symptoms are less favourable than before.

During the whole period of treatment the eye should be closed and protracted by a compressive bandage, applied with comfortable tightness over a pad of jewellers' cotton wool. By this means the patient will be enabled to walk abroad without restraint, so long as he avoids injurious fatigue or hurry. Sometimes, especially when resting quietly at home, a poultice will be a pleasant substitute for the pad and bandage; but neither one nor the other should be applied until a quarter of an hour after the instillation of atropine, lest the solution should be absorbed and removed from the eye.

When the inflammatory symptoms are rapidly subsiding, the mercury, and probably the opium, may be entirely laid aside. But the continued use of atropine is necessary in order to prevent relapse; and the pupil should be kept fully dilated until the eye is quite well. As long as the pupil is dilated the eye does not participate in the functional changes of its fellow, to which, therefore, moderate use may be permitted. An attack of any severity usually leaves behind a temporary proneness to conjunctival irritation, which the atropine may often assist to keep up. For this the cautious use of a mild astringent, such as a lotion containing a grain of sulphate of zinc to the ounce, will usually be found effectual; and it will often be desirable to protect the eye from glare, wind, and dust, after a severe attack, by the use of blue glasses. These are now made of a watch-glass form, for the purpose of excluding side light.

The consideration of the conditions in which iritis, although

present, forms only a part of the malady, and is complicated by inflammation of the cornea, of the choroid, or of the vitreous body, as well as of the forms of iritis which are truly and specifically syphilitic, would lead me beyond the limits within which the present paper must be confined. Such conditions are, fortunately, comparatively rare; and are therefore of less practical importance than the very common disease to which the foregoing remarks have been restricted.

ON INDISCRIMINATE STIMULATION IN CHRONIC DISEASE.

BY DR. ANSTIE.

Of late years, and especially since the death of Dr. Todd, there has been no phrase more current in medical literature, no cheaper and more facile epithet with which to brand a mode of treatment not "understanded of the people," than the expression "indiscriminate stimulation." So long as the great advocate of alcoholic medication was alive, a certain prudent reticence distinguished most of those who from time to time objected to his doctrines. But his death liberated a hundred tongues and pens, and a chorus of reproach arose against his memory. He, forsooth, was the great heretic, who had departed from all sound and reasonable doctrine, and had promulgated a system of treatment which not only was disastrous in its effect upon disease, but undermined the morals of the patients and left them a prey to the vice of drinking, even if they escaped immediate death. The cry was an alarming one, and coupled with the almost simultaneous publication of the researches of Lallemand, which seemed to prove alcohol to be no food but altogether a poison, it undoubtedly produced a great reaction. The history of this reaction is one of the strangest things to be found even in medical annals; and if those cynical writers, who delight to expose the illogical habits of thought and argument which are the too frequently just reproach of medical authors, should ever realize the actual fluctuations of medical opinion during the last eight years, on this all-important topic of stimulation, it is to be feared they will make themselves more signally unpleasant than ever, by their criticisms. The whole affair is admirably illustrative of the vulgar proverb, "out of the

frying pan into the fire;" but the results are by no means matter for joking. I seriously believe that the unreasonable terror of the doctrines of Todd which has prevailed during the last few years, instead of putting an end to an indiscriminate system of stimulation, has simply tended to divert the medical use of alcohol into new and more dangerous channels, and it is the object of the present paper briefly to indicate how this has happened.

The reactionists against Todd committed three mistakes:—

1. They failed to understand the real essence of his teaching as regards the medical use of alcohol.

2. They accepted the rash and ungrounded conclusion of Lallemand, that alcohol was not a food, without anything like sufficient inquiry.

3. They brought back from the grave a spectre which Todd had apparently laid, viz. the metaphysical idea of stimulus and recoil.

1. The essential part of Todd's teaching as regards the therapeutic use of alcohol was this: that whereas this agent had been supposed upon *à priori* grounds to be specially mischievous in cases of febrile disturbance and so-called "excitement," it was really more frequently useful in these circumstances than in conditions of languor and depression with slow pulse and cool skin. To speak of this doctrine as one calculated to increase the total quantity of alcohol consumed under medical orders is to commit an error which a very slight amount of consideration would have prevented. I am not concerned, either here or in any other place, to defend Dr. Todd from the charge that in actual practice he gave excessive and injurious quantities of alcohol in *acute* diseases; but at least I can say this, That the theory which he taught inculcated no routine use of the remedy, even in those maladies; while as regards the multitude of *chronic* diseases, which make up the great bulk of practice, his doctrines had no inherent tendency to inculcate the frequent use of alcohol. In fact, the whole tone of his physiological teaching about alcohol was to regard it as a combustion food with (possibly some capacity, also, to aid the nutrition of the nervous system) which was specially applicable as a substitute for other foods *in the pyrexial state;* and the true tendency of his doctrine, whatever

may have been done in practice by himself (or more likely by followers who only partly understood him) was rather towards a scientific limitation of the use of alcoholic stimulants, than to an indiscriminate extention of it.

2. In their hurried acceptance of the conclusion of Lallemand, that alcohol is not a food at all, English physicians and physiologists committed an error of judgment which seems almost incredible, so little excuse was there for it. I venture to say that there hardly ever was, in the history of physiology, a more complete want of connection between the observations and the conclusions of an inquirer; for while the observed facts proved absolutely nothing more than that *some* alcohol was eliminated unchanged from the body, and did not even include an attempt at quantitative evidence, the conclusion was: "Ergo *all* the alcohol taken into the body, under any circumstances is eliminated unchanged; and alcohol is not a food at all!" Such as it was, however, the profession in this country for the most part accepted this conclusion entire, without a moment's hesitation.

3. The worst mistake of all, however, was the revival of the miserable old metaphysical fiction about stimulus and recoil. It is not easy to make everybody at once perceive the widespread mischief which can be caused by a mere idea like this; yet the facts are positive, and are forcing themselves upon the notice of many. The direct tendency of the theory which reckons alcohol a "mere stimulant," incapable by its decomposition of adding anything to the permanent forces of the body, is to encourage its use in states of chronic feebleness marked by outward signs which are the reverse of those of the febrile state, and more especially for conditions of nervous exhaustion complicated with mental depression. For here the notion is, that we require a mere fillip to the nervous system, to enable it to take advantage of the more potent and lasting influences of tonic medicines and regimen; and this special stimulus or spur it is supposed that alcohol can best supply. Now I have no intention of denying, on the contrary I distinctly believe, that in most, if not all constitutions (with the exception of those persons—*fortunati nimium!*—who live tranquil lives, free from anxiety, and with abundant opportunities of imbibing fresh air and taking pleasant and healthful

physical exercise), a certain limited daily quantam of alcohol is a valuable if not indispensable article of diet. But I am convinced that in no way can this employment of alcohol be placed upon a basis which affords ground for intelligent regulation, as to quantity and time of administration, except by regarding alcoholic beverages as a variety of hydrocarbonaceous food with peculiar physiological relations which only admit of its being usefully appropriated by the organism under strict limitations as to quantity: and I have even arrived by physiological experiment at a rough but apparently useful rule as to the daily average allowance of absolute alcohol which can be beneficially taken by a healthy adult man. No doubt there are considerable differences, as to this, between different healthy individuals; but on the whole there is a remarkable uniformity in the appearance of certain morbid phenomena in persons previously healthy who exceed the daily allowance of from one ounce to one ounce and a half of absolute alcohol, in whatever shape it be taken. The peculiarity of the *febrile* state is, that in many instances it entirely changes these relations between alcohol and the organism, so that from three to six or even twelve times as much of the former can be taken without producing any of the morbid phenomena alluded to; and it is precisely when, and only so long as, this *tolerance* is exhibited, that alcohol is useful in pyrexia; the moment it ceases to act in this way it becomes pernicious, and must be diminished or discontinued under penalty of serious damage to the patient's chances of recovery. Now is there really any similar tolerance for unusual quantities of alcohol in conditions of debility *not* attended with fever? I believe that, with certain exceptions to be presently specified, there is no such tolerance; and that the common notion that the allowance of alcohol should be directly proportioned to the depth of debility—*merely as such*—has worked and is working very great mischief. To my certain knowledge, there are medical men, in extensive practice, who from a mere metaphysical belief that "stimulants must increase fever" would most unreasonably shrink from giving a few ounces of wine to a patient who had a red face and a bounding pulse, (both of them signs of *lowered arterial tension*, by the way!) who do not hesitate to give the most random and inexact

recommendations of "plenty of port wine" to hysterical women, with results which are disastrous to the last degree. Surely it is against these men that the charge of "indiscriminate stimulation" may be justly brought; and we of the school of Todd, who have borne for years past the unmerited obloquy of a supposed tendency to reckless stimulation in disease which was no real part either of our teacher's doctrine or of our own practice, have a right to insist that justice shall be done, and a mischievous popular belief corrected.

It will be well to begin our criticism of stimulation in chronic disease with an enumeration of the undoubted instances in which there is a distinct toleration for large doses of alcohol. 1. There assuredly is a marked tolerance of this kind in many cases of chronic debility which have been induced by one or more copious *hæmorrhages*. 2. There is a variety of pulmonary phthisis, especially common in persons with delicate skin and slight frame, with marked tendency to colliquative sweating, and a notable inability to assimilate either ordinary foods or fatty matter of any kind, in which the tolerance for large and long-continued doses of alcohol is very remarkable, and the benefit produced by such treatment is very great. 3. In certain chronic neuralgias of the aged, where the power of digesting ordinary food is almost suspended by reflex irritation, an almost exclusively alcoholic diet continued for some time occasionally works wonders. 4. In certain infantile chronic diseases, attended with marasmus and an inability to digest ordinary food, small and frequent doses of alcohol, continued for some weeks, produce a remarkable revolution in the general condition.

In all the above instances there is a very notable tolerance of alcohol, and an absence of intoxicative symptoms, under the use of doses which are apparently very considerable.

We turn now to the other side of the account, and the facts we meet with here deserve the most serious consideration of the profession. There are two vast groups of neuroses, the neuralgic and the convulsive, and a third which includes the thousand and one forms of hysteria and of hypochondriasis, for which alcohol is frequently prescribed with a recklessness that to me is both surprising and alarming. Medical science has made the discovery within the last few years that pain, convulsion, and

mental disturbance *always*, and not merely sometimes, imply a lowered rather than a heightened vital power. The fact itself is important and valuable, but the practical conclusions which many physicians deduce from it appear to me disastrous. The diseases in question are "nervous;" it is the nervous power, then, which is to be upheld; and a so-called "stimulant" is supposed to be the especially appropriate remedy. But the very hypothesis of the opponents of Todd's ideas is that a stimulant has no permanent influence on the forces of the body, it contributes nothing but a momentary spur to function; it must therefore be frequently repeated to be of any use; and the greater the depression the larger the dose necessary to rouse the failing organism.

We arrive then at this result, which would be grotesque if it were not most unfortunate: That for the very same purely theoretical reason that makes them reject alcohol in acute diseases, and especially decry its use in large doses, a very influential sect of physicians are in the daily practice of recommending its free use in circumstances of chronic disease, where it assuredly can produce mischief of the most permanent kind. The opponents of Todd say, that there are two dangers in the use of alcohol in acute disease: first, that it endangers life; and second, that if life be spared the tendency to drunken habits is left behind. Putting aside the first of these accusations—which, however, I should entirely deny, as applied to the intelligent application of Todd's principles—let us deal with the second. It is not true, I believe, that the administration of alcohol to patients in acute diseases is *pleasant* to them; on the contrary, the perpetual dosing with wine or brandy, which is necessary in a certain proportion of cases, is almost uniformly most distasteful, except with inveterate topers, and sometimes even to them. Whether the alcoholic beverages do good or harm, at least they are not liked, in the great majority of cases, and the patient is left, at the end of the treatment, with a loathing instead of a love for them. Still they can be got down, and retained on the stomach, so long as tolerance, or absence of intoxicative consequences, is observed. But a time comes when this physiological tolerance ceases, and along with its cessation there almost always comes a positive shuddering dislike, and often a downright

refusal, of the stronger alcoholic beverages. The convalescent may relish *beer* in moderation, but in my experience he almost always hates the idea of wine or brandy. There is no statement which has ever surprised me more, by its entire want of correspondence with the facts of my own experience, than this very common assertion, that stimulation in acute disease is apt to create a subsequent tendency to drinking. The case is vastly otherwise, however, in chronic or nervous diseases, especially those attended with much mental depression. The great majority of these patients either at once, or very readily, develop a strong liking for alcoholic beverages; a liking, too, which is precisely of the most dangerous kind. I cannot take a better illustrative instance than that which is unfortunately so very common—the case of women who, whether married or not, have difficult and painful menstrual periods, accompanied with neuralgic pain and hysteric depression of spirits. If ever there were a case in which the physician may make himself, in the most tragic sense, the evil genius of his patient, it is this. The woman has pain, or spasm, or both, and the doctor tells her that brandy will relieve these symptoms, which is true enough. It is also true, that if the brandy could be administered strictly as a medicine, regulated to the minimum dose which was necessary, no harm would be done, though no permanent cure could be expected. But if it be left to the patient herself to settle the dose, there is the greatest danger that she will exceed the necessary quantity, and instead of taking a moderate stimulant dose, which would relieve pain without narcotising, will take a quantity which produces semi-intoxication. There is no more dangerous trial, for a female who is subject to these periodic attacks of pain and depression, than that first experience of alcoholic narcotism. In such circumstances it is a melancholy fact, that the *oblivion* of slight drunkenness is most seductive; and the chances are great that on the recurrence of the same symptoms the patient will long, with increasing eagerness on each successive occasion, for the same luxurious stupefaction. Let no one think that this warning is the expression of fears based on mere imagination; my own experience has supplied only too many instances of the reality of the danger, and inquiry among physicians whose practice in nervous diseases is large has added greatly to the strength

of my convictions. I have for a long time made it a rule *never* to recommend, or even allow, a patient subject to ovarian neuralgia to take alcohol at all, except in the ordinary quantities *with meals*. Pain and nervous depression is best quieted with small subcutaneous injections of morphia, or, still better, of atropia. It is a very bad precedent to permit a woman to take alcohol for the mere momentary relief of pain or depression.

Although the instance above cited is, perhaps, the most striking illustration of the dangers of indiscriminate stimulation in chronic disease, there are many others scarcely less important The whole group of chronic painful and convulsive disorders stands in the same relation to alcohol. The remedy can be administered strictly *as a medicine*, in small stimulant doses, with good effect. But there are moral elements in the case which we cannot, without grave peril, leave out of sight. The patients are very generally weak in their power of mental resistance, so that to expose them to a temptation is more than usually dangerous. Some persons will be surprised at this statement, and no doubt there are splendid exceptions to be found in individual cases; but I am convinced that the rule is such as has been stated. To the few who bear up heroically, and with undiminished intellectual and moral force, against chronic pain and mental misery, must be opposed an overwhelming majority who do not bear up at all, or who do so only by drowning their troubles either in actual physical narcotism, or else in some factitious emotional intoxication, which is nearly or quite as bad as the other. Therefore, to put such an agent as alcohol into the hands of such persons, or in any way to encourage their taking it at other than the usual mealtimes, under the restraint of the presence of other persons, is to court danger in a most direct manner.

It seems to me that there are two rules, the observance of which ought to become general, and only to be departed from under very special circumstances. One is that alcohol should never be directly prescribed for the relief of chronic pain, convulsion, or spasm, during the *self-conscious* period of life. In infancy and early childhood it is quite possible to administer it exactly as one would a medicine, without leaving the faintest trace of a hankering after its illegitimate effects. In the old age

of those who have led temperate lives, but have habitually used alcohol, it may also be possible to permit the somewhat freer use of it. But during the whole of that period which corresponds to the sexual life, especially in women, the organism is so exquisitively alive to its own emotions, that the effect of a false step in the direction of narcotic indulgence may be tremendous. A second rule is that never, under any circumstances where it is possible to avoid it, should alcohol be given for the class of maladies we are considering, in larger quantities than those already roughly indicated as the limits of its useful *dietetic* employment in health. There is no true physiological tolerance for it in these cases; even in the instance of severe and agonizing pain, in which large doses of brandy may be swallowed without any apparent drunkenness, the appearance of considerable quantities of unchanged alcohol in the urine, and the occurrence of after headache, &c., show that there has been true narcotic poisoning. And the relief of such pain (*e. g.* angina pectoris, severe ovarian neuralgia) may be better and more speedily accomplished by the use of ether, or of morphia or atropia subcutaneously injected. And as for the whole series of chronic convulsive disorders, and of the mental states which hover between hysteria and insanity, I am convinced that everything which can be done in a more special direction than that of careful improvement of nutrition can be far better effected by bromide of potassium, than by the most liberal use, or as I should call it abuse, of alcohol.

Reviews.

De la Polyurie (Diabète insipide): Thèse presentée au Concours pour l'Agrégation. Par le Dr. E. Lancereaux. Paris: Delahaye, 1869. 8vo. pp. 88.

(*On Polyuria, or Diabetes Insipidus.* By Dr. E. Lancereux.)

The only part of this interesting treaties which we shall notice are the concluding pages on treatment. This chapter must, however, be read by the light of the author's main pathological theory; viz. that abnormal flow of urine and abnormal thirst are two associated phenomena, of which the former and more important depends on a *nervous influence*. Consequently he believes that remedies should be addressed to the nervous system, and especially to particular and special centres. He instances the remarkable effects obtained by Muhrbeck, Rayer and Trousseau, with the use of valerian, belladonna, camphor, and castor; especially with valerian; he cites a striking recent instance of the good effects of the last, from the clinique of Professor Behier, and a somewhat less remarkable one observed by Dr. Reith. Camphor he thinks well of, though not so highly as of valerian. Castor and assafœtida seem to be only doubtfully useful; and no more than this can be said of opium, though it has seemed to do real good in some cases. Turpentine, copaiba, sal prunella, ergot of rye, and iodide of potassium, are all dismissed with a pretty similar estimation. A very remarkable case is quoted from Seidel, of the effects of *galvanism*, in which the poles of a powerful battery were respectively applied to the side of the spine and to the corresponding hypochrondrium, with the effect of producing a rapid, large, and permanent reduction of the quantity of urine. The treatment with iron and mineral acids which is so much in use in England is not believed by Lancereaux to produce anything more than amelioration. Nevertheless, on this, combined with good feeding, a sufficient allowance of fluids, baths, and other means of exciting the skin, he would appear to place the chief reliance. With the one exception of valerian he does not speak warmly of any specific treatment.

Considérations sur les Résultats de la Paracentèse dans la Pleuresie purulente. Par le Dr. ARISTIDE ATTIMONT. Paris: Le François, 1869.

(*Considerations on the Results of Paracentese Empyema.* By Dr. A. ATTIMONT.)

ONE might have thought that, in the case of empyema at least, there was little that could now be added to the elaborate and copious disquisitions which have appeared on the value of paracentesis, and on the best methods of performing it. The reader will, however, find this little treatise of real value. It is a good résumé of what has been done, and of the actual state of our knowledge on the subject, with perhaps a tendency to under-estimate rather than to exaggerate the proportion of successful results which may be obtained by able practitioners. However, this is a fault on the right side.

Étude critique des diverses Médications employés contre la Diabète sucré. Par PAUL BROUARDEL. Paris: Pluralier, 1869. 8vo. pp. 188.

(*A Critical Study of the different Modes of Treatment employed in Diabetes Mellitus.* By PAUL BROUARDEL.)

THIS work is a review of the various forms of treatment which have been at one time or another proposed for the cure or relief of diabetes, but we must say that the conclusions at which it arrives are somewhat lame and impotent. It was hardly worth while to expend so much pains in order to effect so little. The most important conclusion to which M. Brouardel comes is that the most curable forms of diabetes are those from nervous causes, and those which depend on hygienic faults, and especially on a too rich diet with insufficient muscular exercise. The author's remarks on the disputed question as to the effect of a largely azotised diet seem to us very undecided and generally disappointing. But above all we are surprised that he pays no attention to the remarkable observations which have been made quite lately on the influence of opium upon the disease. It is really a matter of just reproach to our French neighbours that they are so very long in hearing of what passes in this country. The opinion of Bouchardat, upon which M. Brouardel founds the dogmatic statement that opium is only a remedy which modifies the accidental complications of diabetes, certainly requires to be reconsidered in the light of recent English experience.

One matter of real interest in the book is the trial by M. Brouardel of the arsenic treatment, based on the researches of Saikowsky, and which Professor Leube has lately found very

successful (*vide Deutsches Arch. f. Klin. Med.*, and *Practitioner*, May). M. Brouardel tried the treatment on one patient, but met with no success; in fact the sugar increased. As, however, it is very easy to watch and control the physiological action of arsenic, he thinks that the experiment should be repeated. It is quite possible that the treatment is exclusively appropriate to a special group of cases, in which the original cause of the saccharine urine resides in the liver.

Die therapeutische Anwendung des kaltes Wassers bei fieberhaften Krankheiten. Kritisch bearbeitet von Dr. Friedrich Küchenmeister. Berlin, 1869. Hirschwald, Gr. 8. Price $2.25.

(*The Therapeutical Application of Cold Water in Febrile Diseases.* By Dr. F. Küchenmeister.)

It is an extraordinary thing that the regular medical profession of this country should take so little heed as it does of the important questions relating to the cold water treatment of disease. We leave to the uneducated persons who call themselves hydropathists the whole working of a method of treatment which is very powerful both for good and harm, and also requires scientific training to appreciate its results with any accuracy; we are consequently left without any reliable records of the value of this or the other variety of hydrotherapeia. There is at least one branch of the subject, however, which the English medical profession must surely soon grapple with; namely, that which forms the subject of the above-named work. The recent foreign literature on this question is most extensive,[1] but Dr. Küchenmeister, whose work is chiefly a careful compilation, destined to disentangle the confusions and complications of the subject, so as to present it in a manageable form to the student and the busy practitioner, comes to a conclusion which aggravates the reproach justly attaching to the profession in this country, for their present neglect of hydrotherapy. He shows that, after all said and done by the recent German observers in the cold water treatment of fever, the very latest researches do little more than confirm and somewhat simplify the results obtained long ago by an English author—Currie—whose discoveries, made with infinite pains, and under all the obstacles due to imperfect

[1] Our readers will remember that some months ago we mentioned the extensive researches into the cold water treatment of typhoid fever which were made by Liebermeister at Basle. These researches have since been published by MM. Liebermeister and Hagenbach in a volume of the highest merit, which we propose to review on a future occasion. Taken together with the treatise of Jürgendsen, published in 1866, they form a most remarkable body of evidence on the subject.

machinery of observation, really laid the whole foundation for a rational use of the method. With a candour which deserves all praise, our author points out that nearly every reproach which has been levelled by recent writers at the accuracy of Currie's observations is an error, based on imperfect and careless study of his work; and especially remarks, that the temperature of 120° Fahrenheit, once mentioned in Currie's book as having been observed in fever, was not taken from his own experience, and that he expressly intimates his doubt of its accuracy, on account of its being opposed to all his own experience.

Dr. Küchenmeister's volume is a handy and useful summary of the results which may be said to be guaranteed on trustworthy authority. As regards the treatment of typhoid fever, he sums up these conclusions to something like the following purpose. Cold water is no panacea for typhoid; it does not prevent death in a certain proportion of cases. Applied early (during the first week,) it never causes the fever to abort altogether; but there is a general consensus of authorities to the effect that it prevents the fever from taking a severe course, limits the tendency to complications, especially the more dangerous ones, and makes the convalescence easier and more rapid. The defervescence stage also appears to be particularly shortened. Though the *early* application of the method is most strikingly useful, still it is not without great value, in some cases, in *later* stages, with very high temperatures. The cold water treatment certainly moderates the mortality from typhoid, though it does not abolish it. Thermometry affords the best indications for the cold water treatment; as soon as the temperature rises permanently above 102·5° Fahrenheit, or higher, the treatment is to be employed, and repeated frequently so long as the thermometer stands at, or higher than, the above temperature. The chief effect of the bath is the lowering of temperature: this lowering does not reach its maximum immediately after the bath. The greater the degree of cold, and the earlier it is applied, the greater (usually) is the result; the severer the course of the disease, the more energetic must be the cooling treatment. The diminution of bodily heat appears to be largely due to the excitement of skin transpiration, which the bath brings about when it acts favourably: if the skin be already perspiring, there is no need for the artificial cooling. The simultaneous use of quinine in large doses, as an antipyretic, is recommended; and it is said that quinine alone often fails to act in this way till after the cold water treatment has been applied, but then acts strikingly.

Among the many different methods of applying the cold water treatment in fever, Küchenmeister gives the preference to Currie's cold affusion—the patient merely sitting in an empty

tub, and having cold water poured over him. This is especially useful when there are severe cerebral symptoms with depression of the motor energy of brain and cord ; threatening paralysis of the heart ; or the severe degrees of bronchial complication, with passive collection of large quantities of thick secretion in the tubes ; or pneumonia, bloody expectoration, &c. If the sitz bath be used, the patient must have his whole chest well rubbed, as he sits in the tub, with towels, until the skin becomes red.

The cold plunge bath alone, without affusion, answers well for the medium and the slight cases. When the patient is seen for the first time at too late a period for the favorable application of the *cold bath*, repeated tepid sponging of the whole body, or tepid affusion, is recommended. Patients who suffer from *rigors* when seated in the tub should have a hot brick wrapped in flannel applied beneath their feet.

A variety of minute details—all, in fact, that any practitioner could wish to know—are given about these and other varieties of the cold water treatment in typhoid. In an appendix there are also some very interesting records of its use in scarlatina and other febrile disorders, in certain neuroses, in phthisis, and in puerperal diseases. We fancy it will startle most English physicians to be told, *inter alia* (as indeed Currie had already asserted,) that by consent of all the best observers the use of the *cold* plunge and the *cold* affusion during the menstrual flow does not at all check it ; though there is some ground for thinking that tepid baths do. In conclusion we recommend Dr. Küchenmeister's book as a compendium of a great deal of information not generally possessed by practioners in this country.

Étude sur le Croup après la Trachéotomie. Par la Dr. Sanné, Ancien Interne des Hôpitaux de Paris, &c. Paris : Germer-Baillière. 8vo. pp. 274.

(*A Study of Croup after Tracheotomy.* By Dr. Sanné.)

This book is a thoroughly sound and creditable piece of work ; and besides its obvious practicable value, gives occasion for some serious reflections on the great room there is for improvement in certain departments of our English system of clinical training for the select class of students by whom the higher ranks of the medical profession must be ultimately filled. The author is a former *interne* of the Paris hospitals, and his book is a first-rate illustration of the splendid advantagas which that office affords to a young man who is willing to work. Dr. Sanné was *interne* at Saint Eugénie in 1860, a year in which the affection

of which he treats raged with exceptional severity, and tracheotomy was performed a great number of times in the wards of M. Barthez. His personal experience includes eighty-three operated cases, which he was able to watch and to treat through all their stages; and to these he has added a much larger number, of which M. Barthez gave him the records, so that he bases his remarks and conclusions on the very considerable total of 662 cases of tracheotomy in croup. It may well be desired that such magnificent opportunities for the study of particular diseases on the large scale were within the reach of our English house-surgeons, and that the previous training of those officers were such as to enable them to make such a scientific use of them as M. Sanné has done.

The plan of the book is very good. The author traces, first, the whole after-history of uncomplicated croup going on to cure after operation. In the second part he describes the complications which may result distinctly from the operation. The third and final section of his work is occupied with elaborate clinical histories of thirty-one selected cases. Everywhere we find evidence of a careful and practical study of details which shows that the writer is familiar with every aspect of his subject, with one exception; which is, however, an important one. Whether it be from a want of acquaintance with English authors, or from a deliberate adherence to the doctrine that diphtheria and croup are only variations of one disease, he nowhere recognizes the fact that a large proportion of his cases must have been diphtheric in the genuine sense of the word; a circumstance which of course altogether alters the significance of ratio of mortality, and renders it difficult to judge of the real value of the subsidiary treatment, the mode of alimentation, &c., which he recommends. One remark, moreover, it is impossible to avoid, viz. that notwithstanding the great advance which French physicians have made, since the days of Trousseau, towards a more rational system of treatment in diphtheria, they still retain some superstitions. Else, why does M. Sanné only venture to prescribe quinine "when the fever begins to diminish"?

Essentials of the Principles and Practice of Medicine. A Handbook for Students and Practitioners. By Henry Hartshorne, M. D., Professor of Hygiene in the University of Pennsylvania, &c., &c. Second Edition. Philadelphia: Henry C. Lea, 1869.

It is with a very mixed feeling that we sit down to criticise this book, after reading it with a good deal of care. We may say at once, that its title would considerably mislead any one who casually took it up; for it by no means belongs to the numerous

class of manuals which are constructed on the rudest principles of compilation, and without any intelligible principle of selection, but merely with a view to the production of something saleable. It is, on the contrary, a perfectly individual book; the author having made a genuine effort to assimilate, and not merely swallow whole, the researches of the moderns, as well as the dogmas of the ancients. His book also shows evidence of a laudable desire to appreciate the historical development of medical opinion; an unspeakably important matter, to which the present generation of medical men are for the most part culpably indifferent. Moreover he shows a hearty dislike of the dilettante-expectant attitude in therapeutics, so fashionable in the present day, which earns our most unfeigned sympathy. Yet we cannot say that we think this an altogether satisfactory volume. In the first place, the author has set himself an obviously impossible task in endeavouring to compress within the limits of a tiny handbook such a view of general medicine as he labours hard to present to his readers. And in regard to the practical part of the volume, which alone immediately interests us, we cannot honestly credit him with a success. He is very painstaking and (as becomes the writer of a manual) sufficiently dogmatic. But he entertains certain physiological ideas which appear to us fatal to his chance of establishing a rational system of therapeutics. Upon the subject of inflammation, for instance, he holds views as to the *active* functions of the blood-vessels for which there really is no evidence whatever; and these pathological views conduct him to an antiphlogistic treatment which we cannot but consider retrograde and inappropriate to the present day. How many times over must that monster—the fiction of a rhythmic propelling power of the arterioles—be slain? We declare that we really cannot bring ourselves to go through the process. With all our respect for the author, we feel inclined to treat his pet theory as Sam Weller did the fat boy when he ventured to express an admiration for the pretty housemaid—dismiss it with a harmless but ceremonious kick. Be it known, then, unto Dr. Hartshorne, that it is not (as he seems to think) only one Brown-Séquard who holds the doctrine that the muscular powers of the arterioles are exerted only in the direction of *restraining* the flow of blood through those vessels; and that, for instance, if he will condescend to study the works of a not altogether unknown person called Marey, he will find the physical proof of this theory, which he thinks so heretical, worked out with a copiousness of illustration that contrasts somewhat strikingly with his own rather vague assertions. Considering the doubtful physiological basis on which Dr. Hartshorne's continued adherence to phlebotomy is based, we cannot wonder at, indeed, we expressly approve, the name

of "balancive" which he applies to the group of remedies in which he includes blood-letting. So great must be the difficulty which his theory experiences in "balancing" itself upon this precarious foundation, that even in America, where perilous performances are common and popular, there must be an uneasy consciousness that it can hardly avoid toppling over.

Two Cases of Œsophagotomy for the Removal of Foreign Bodies: with a History of the Operation. Second Edition, revised, with an additional case. By David W. Chever, M.D., Adjunct Professor of Clinical Surgery in Harvard University, &c.

This book gives very interesting accounts of three cases in which the operation of opening the œsophagus to search for obstructing foreign bodies was performed. All three recovered; in two the obstruction was removed, in the third no foreign body could be discovered. We think that the author makes out a really strong case, both from his own experience and by careful analysis of all the cases yet put on record, in favour of the early performance of œsophagotomy in all cases where the bougie or the snare cannot either push down or pull up the impacted foreign body. Certainly there seems no reason to regard the operation with such an extreme dread as many surgical writers have evinced in speaking of it in their treatises. It has been spoken of as a doubtful *pis aller;* it will probably become the regular procedure in a considerable number of cases.

An Introduction to the Elements of Pharmacy; or, the "Major and Minor Examinations." By F. Harwood Lescher, Pareira Medallist. London: Churchhill & Sons, 1869. 8vo. pp. 194.

This volume is a surprising work of industry; and the intention with which it has been compiled is most praiseworthy. It is an attempt to give to the students of pharmacy who are to be dispensing chemists a broad general knowledge of the "principal points in *materia medica*, botany, chemistry, pharmacy, prescriptions, and practical dispensing." The author wishes both to raise pharmacy itself to a higher rank and to claim for the student of pharmacy a higher intellectual position and a more extended field of study. To this end he has tried to break ground for the beginner by presenting him a tabulated arrangement of the subjects above-named, in such a way that he may obtain a bird's-eye view of the whole field of scientific knowledge with which he is concerned, and at the same time to allure him to a fuller study of the special subjects in the perusal of more elaborate treatises. Supposing the plan to be one which is really adapted to lead pharmaceutical students on this path, Mr. Lescher has undoubtedly carried it out very well. We hesitate

to decide whether the plan is or is not the best possible, for two reasons: first, that we have no such tutorial acquaintance with the class of gentlemen for whom the book is intended as might enable us to judge how far it suits their style of mind and their special faculties of learning; and second, that we have, personally, a rooted aversion to the study of tabular statements of all kinds, which is probably our own special share of the original wickedness common to the human race. All we can say is, that if our young pharmaceutists, after nourishing their adolescent intellects upon Mr. Lescher's book, do really proceed to enjoy the more copious banquets provided for them by Royle and Pareira and Headland, their minds will be well nourished indeed. May good digestion wait on appetite! But we can well fancy some stern old druggist of the primitive school reproaching them with intellectual *gourmandise*, in some such fashion as the Roman satirist rebuked the ever-growing luxury of his time. That grumbling *censor morum* remarked, that whereas preceding generations had been content to make the salad the culminating dish of the *cœna*, his contemporaries merely introduced it as a whet, preliminary to more serious eating. And it is certainly a remarkable sign of the present times that Mr. Lescher's tables, well spread with therapeutic vegetables, *non sine sale*, are only considered to display the *first* course of the pharmaceutical feast.

The Baths and Wells of Europe; their Action and Uses. With Hints on Change of Air and Diet Cures. By JOHN MACPHERSON, M.D. With a Map. London: Macmillan & Co. 1869.

THIS treatise is a handbook of an important subject, and treats that subject from a somewhat novel point of view. Dr. Macpherson, whose researches with regard to cholera, made while he was in India, were well known and highly appreciated, has been struck with the necessity of giving a more general view of the mineral water resources of Europe than is supplied by any existing book; at least, by any accessible to English people. He does not attempt to supply minutely exact information as to the chemical constitution of the several waters; but, on the other hand, he furnishes a sufficient outline of their composition, and brings into one general view the properties and practical uses of an immense number of baths, in situations so varied as to suit the numerous kind of wants, and even whimsies, of every variety of patients. There is a good deal of information in this volume about many excellent baths which combine real medical virtues, with another equally important—the merit of taking their visitors into beautiful and out-of-the-way scenery. Dr.

Macpherson gives a general account of all the *baths*:—indifferent and earthy; sulphur; salt; and of artificial baths and inhalations, including peat water, pine balsam, wine-dregs, whey, and many varieties of gaseous baths and inhalations. Of *wells* he also gives a complete list:—indifferent and earthy; sulphur; salt; alkaline; purgative; ferruginous; and a chapter on the effects of waters which contain minute quantities of salts and carbonic acid; besides various chapters on the general subject of bathing and bath life, on the effects of the external use of water merely, &c., &c. The usefulness of the book is much enhanced by a map, which gives at a glance the situations of all the European baths, with their relations to the great lines of railway.

Pennsylvania Hospital Reports, 1869. Philadelphia: Lindsay and Blakiston.

In this very handsomely-printed volume there are several papers of high interest in a therapeutical point of view. Let us notice first the results of treatment for stone recorded by Dr. T. G. Morton. Of 111 cases of *lithotomy* (105 males, 6 females), 90 were cured, 2 relieved, 1 was convalescent; 18 had died. The mortality at different ages ran thus in 64 cases when the age was recorded:—Under 6 years, 4 died; from 20 to 30 years, 1 died; from 30 to 40, 2 died; from 50 to 60, 2 died. The numbers of patients operated on at different ages ran thus:—Under 5 years, 20; between 5 and 10 years, 14; between 10 and 20 years, 14; between 20 and 30 years, 6; between 30 and 40 years, 4; between 40 and 50 years, 4; between 50 and 60 years, 2. It will be seen that while the general opinion as to the comparative fatality of lithotomy in middle and advanced life is sustained by these figures, the nearly absolute immunity which some attribute to childhood before puberty is by no means borne out. It is curious that, of the 6 cases operated on between 10 and 20 years, not one died, the only decade quite free from mortality. Of lithotrity there were fourteen cases, and 2 deaths, both in men between 20 and 30 years.

A very elaborate paper by Dr. J. M. de Costa on the treatment of acute rheumatism by bromide of ammonium, in which he comes to the conclusion that it has an indisputably good effect on the disease when given in large doses (90 grains daily.) He says he has also tried it with apparent success in acute muscular rheumatism; and also states that it undoubtedly does produce benefit in chronic rheumatism, though here the iodide of potassium is much superior. He recommends the trial of bromide of ammonium in gout also.

Dr. Edward Hartshorne has an excellent paper on the treat-

ment of oblique fracture of the clavicle; and Dr. John Aspinwall, Jun., on excision of the hip joint, the value of which is much increased by a tabular summary of the results of 242 cases of the operation. We may also mention a most interesting and important paper by Dr. James H. Hutchinson on hypodermic injection of morphia in sunstroke, a mode of treatment which seems to have been successful to a remarkable and unexpected degree. Altogether, this volume is an admirable one, and ought to be in the libraries of all medical societies, and of all practitioners who can afford it.

Clinic of the Month.

The Alkaline Treatment of Rheumatism.—Mr. Charles H. Robinson, of the Ledwich School of Anatomy, formerly a medical officer in the Peninsular and Oriental Company's service, speaks strongly as to the efficacy of this treatment, and adduces six cases which came under his care at sea. He gave bicarbonate of soda, two drachms three times a day. Case 1 lasted twenty days; case 2, six days; case 3, ten days; case 4, ten days; case 5, twenty-five days; case 6, twelve days: total, eighty-three days. This gives an average duration of a trifle under 14 days, or excluding the sixth case, which was not articular rheumatism, an average duration of $14\frac{1}{5}$ days each. Mr. Robinson thinks this a great improvement on "flannel and six weeks." (See *Lancet*, June 12.)

New After-treatment in Operations on the Urinary Organs.—Mr. Jessop, of Leeds, brings forward a method by which we may prevent the occurrence of a mishap of which the most experienced surgeons have complained—that after operations for stricture, a catheter being tied into the bladder, the urine nevertheless escapes also by the side of the catheter, and thus irritates the cellular tissue. Mr. Jessop attaches an india-rubber tube, of the size of the catheter and two yards long, to its end, and carries the free extremity of the tube into a vessel under the bed. A continuous drain of the contents of the bladder is thus kept up, no accumulation takes place, and the result is, that in the case of perineal section, *e. g.*, none passes by the wound in the perineum. The advantages of securing such a result are obvious. (See *British Medical Journal*, June 19.)

Cleft Palate successfully operated on in a Girl of Five Years.—An interesting case of successful staphyloraphy has occurred in Mr. W. Adams' practice at the Great Northern Hospital. The fissure was double, extended completely through both hard and soft palates, and was associated with hare lip, having a single fissure into the right nostril. The hard palate was left untouched; the edges of the soft palate were pared, the levator palati divided, and three sutures put in. The gag, or instrument with a tongue plate, and opening by means of cog-

wheels, made by Ferguson, and recommended by Mr. Thomas Smith, was used in this case. (See *Lancet*, June 12.)

The Arsenical Treatment of Phthisis.—Mr. Sanger, of the Convalescent Hospital, Seaford, reports very favourably on the action of arsenic in phthisis. His attention was first drawn to the subject by a case in which he administered Fowler's solution to a phthisical patient with the intention of curing an eczematous eruption; the eczema was not cured, but the pulmonary symptoms were much relieved. The report of MM. Hérard and Moutard-Martin still further impelled him to try the arsenical treatment on the large scale, with the numerous phthisis patients who came to the Convalescent Hospital; and he declares that every patient so treated derived benefit. He gives five minim doses of liq. arsenicalis, or solution of arsenite of soda, twice a day, with a drachm of citrate of iron wine, or five grains of citrate of iron and quinine. Where iron cannot be borne, he gives hyposulphite of soda, in doses of 15 or 20 grains, with the arsenic. (See *Lancet*, June 5.)

Severe Struma Benefited by the Waters of Woodhall Spa.—A patient of Mr. Paget's, at St. Bartholomew's, appeared to be in a hopeless state of exhaustion from large strumous abscesses with diarrhœa and wasting. With great difficulty he was removed to Woodhall Spa, in Lincolnshire, but it was scarcely hoped that he would return alive. He drank six ounces daily of the water, except when the diarrhœa was urgent, and had a bath at 95° for half an hour on alternate days, nourishing diet, &c. The wounds were dressed with lint wrung out of the Woodhall water. Notwithstanding one severe attack of diarrhœa, which endangered his life, he got so much better within one month's residence at the spa, that on his return to London he walked to the hospital. It was then found that he had gained greatly in flesh, strength, and appetite, and his wounds had nearly healed. (Ibid.)

Paracentesis Pericardii.—Dr. Clifford Allbutt reports a case in which this operation was performed with markedly good effect. In a former case, which he had under his care two years and a half since, the success was complete and final; in the present instance the operation only acted as a palliative. The patient was a weakly girl, aged 27, in whom pericarditis with extensive effusion had come on somewhat insidiously, and was causing the greatest distress; it was thought she could not survive the night. However, some stimulants having been administered, the force of the pulse was somewhat increased. Friction sounds were present, but there was such unequivocal evidence, from other physical signs, that there was not merely lymph but a *large* quantity of serious effusion that Dr. Allbutt requested Mr.

Teale to operate. A fine exploring trocar was inserted in the fifth interspace, about an inch from the left border of the sternum; the point was thrust upwards and inwards till it touched the heart. The point was now sheathed, and the canula was driven well home, till the heart jerked it to and fro. The canula was then partly withdrawn, and serum began to flow. The tube now slipped a little and the trocar had to be reinserted, to carry it home. The straw-coloured serum now flowed again, escaping rather with the impulse of the lung than of the heart. About five ounces of fluid were drawn off, and the patient experienced great temporary relief. The case had, however, too far gone; there was extensive œdema of the lungs, and on the following day the patient was as bad as ever, and there was so much distress that the puncture had to be repeated. It again gave great relief, though not so great as the first operation had caused, but the patient sank a few hours later from bronchitis and pulmonary œdema. Dr. Allbutt remarks that tapping the pericardium is really a very simple operation; and that there is no reason to fear that a slight accidental wound of the heart would do any harm. On the present occasion a little air accidentally entered the pericardial sac. Dr. Allbutt will in future cases guard against this by connecting the canula with an india-rubber tube whose extremity dips under water. He points to the ready emptying of the sac by the expansion of the lung, in this case, as a refutation of Oppolzer's objection to the operation —that the sac, having no elasticity, and being placed in the unyielding chest-cavity, cannot be properly emptied, or if emptied will refill. (See *Lancet*, June 12).

Nitrate of Lead for Sore Nipples.—Dr. J. G. Wilson, Professor of Midwifery in the Andersonian University, states that from long experience he has been convinced that this treatment is superior to any other, and that he has often known it succeed, when tannin, gallic acid, zinc, benzoin, borax, &c., failed. The formula is, ℞ plumb. nitrat. gr. x., glycerine ʒ i; dissolve. This preparation is to be freely applied to the nipple after suckling; and must be carefully washed off before the infant is allowed to suck again. In severe ulceration or chapping a stronger solution is sometimes required. It may be useful, sometimes, to use a nipple-shield simultaneously; and occasionally nitrate of silver, collodion, or a solution of gutta-percha may be usefully employed as adjuncts, in cases of great obstinacy. (See *Glasgow Medical Journal*, May.)

Carbolic Acid as an Antiseptic, in Obstetric Practice. Dr. Wilson has been led to use a weak solution of carbolic acid as an antiseptic intra-uterine injection, when pueperal blood-infection seemed impending. He does this, not only when there

is actual putridity of discharges, but also when there is reason to suspect the retention of portions of placenta, membrane, &c., which easily might decompose. Dr. Wilson allows, however, that it is difficult to determine the exact amount of credit due to the carbolic acid itself, and how much to the mere washing out of the uterine cavity. (Ibid.)

A New Lithotrite.—Dr. Patrick Heron Watson has invented a new lithotrite by which the crushing of stones of large size can be rapidly performed. He applies leverage to each blade of the lithotrite by means of moveable forceps, in such wise that the closing of the handles approximates the jaws of the lithotrite, and the opening of them, effected by a spring between their shafts, causes the jaws to gape. In this way fragments can be reduced to detritus with far greater rapidity than by any other movement. The movement is also quite as steady and powerful as that effected by means of the screw. (See *Edinburgh Medical Journal*, June.)

New Means of Extension in Fractures of the Femur.—Mr. Stapleton has devised the following plan, which avoids the need for a perineal band. A strong tape, more than twice the length of the Liston's splint, is taken and laid along each side of the splint, being passed through the hole in its upper end, and the extremities being tied together at its lower or notched end ; the ends of the tape are left sufficiently long to hang over the foot of the bed, and to them is attached a weight, which must be regulated according to the amount of force which is to be employed. A broad strip of adhesive plaster is then placed along the inner side of the leg, from below the knee to the foot, a similar one being fixed along its outer border ; the two are knotted together a few inches below the foot, the point of the splint being passed through the loop formed by their junction. The upper end of the splint is then fixed to the body by a roller, and anterior and posterior scored splints having been applied to the thigh, the whole is enveloped in a many-tailed bandage. It will be seen that when the weight which is attached to the splint, and which, from the mode of its fixation, draws evenly on the splint in its whole length, is suspended over the foot of the bed, it will, by pulling on the plaster fastened to the leg and hitched over the fork of the splint, keep up a constant and even extending force, and will moreover, from the mode of its application, tend to hold the splint in position. (See *Medical Press and Circular*, June 2.)

The Piecemeal Excision of Nævi.—Mr. Furneaux Jordan brings forward an operative procedure for the cure of nævi, which he has hitherto only imperfectly described, though he has practised it since 1863. An incision is made through the super-

jacent skin and through the nævus, so as to completely divide it into two halves. Hæmorrhage is prevented by pressure on the adjacent arterial trunks. In the face for instance, where the operation is most useful, pressure on the facial or temporal or supraorbital, one or two or all, arrests the bleeding. If pressure on the main trunks do not perfectly arrest all hæmorrhage, one or two points of pressure (with a director) near or even within the incision will. Jordan has often been surprised to find that one or two points of pressure alone sufficed to secure a bloodless condition of a nævoid section. The next step is with clawed forceps and scissors (curved on the flat) to remove each half piecemeal, beginning at the centre, and proceeding to the periphery. There is not the least difficulty in distinguishing the nævoid (capillary, venous, or arterial) from the healthy tissue. The removal of one-half should be completed before that of the other is begun. When the nævus is completely removed, there is no hæmorrhage on relaxing the pressure. As a rule, it is quite unnecessary to remove any skin; even if involved, it recovers after the excision of the subjacent nævus. If very much implicated, an elliptical portion of skin may be taken away, so that the edges of the wound can be so brought together as still to leave only a line of cicatrix. Whether any skin be removed or not, the edges of the wound should be brought together with siver wire, and moderate pressure effected by means of a pad of dry lint and a bandage.

Jordan believes piecemeal excision to be the best operation in all cases where it is desirable to save the skin; and these are the great majority of cases. Where it is not desirable to save the skin, as in very pedunculated nævi, or where the skin is extremely implicated over the whole tumour, the *écraseur*, or the ligature, or bodily excision, may be preferable. In using the *écraseur* or the ligature, the circular incision to receive the chain or ligature is most easily and evenly and rapidly made with sharp-pointed scissors, one point being first thrust through the skin.

Piecemeal excision from the centre is applicable in the larger number of cases, and especially in the face and eyelids. It is immediate, complete, safe, and leaves only a linear cicatrix. It removes the nævus, all the nævus, and nothing but the nævus. (See *British Medical Journal*, May 29.)

Results of Acupressure.—Mr. James F. West, senior surgeon of the Queen's Hospital, Birmingham, gives the following table of the results of acupressure in a number of important operations performed at that institution during twelve months (see *British Medical Journal*, June 19):—

Name and age.	Nature of disease or accident.	Operation.	Number of needles employed.	Time of withdrawal of needles after operation.	Remarks.	Date of operation.	Result.
J. A. 8	Scrofulous disease of knee-joint.	Amputation of thigh at junction of middle and upper thirds by Teale's method.	2	50 hours.	No hæmorrhage.	Sept.3, 1867.	Cured, Nov. 29, 1867.
M. P. 21	Deep and chronic ulcer of thigh from burn.	Double flap amputation through trochanters.	2	72 ,,	No hæmorrhage.	Dec. 20.	Died from shock, Dec. 24.
T. B. 67	Compound fracture of arm.	Amputation by oval skin flaps, through middle third of arm.	2	72 ,,	No hæmorrhage.	Dec. 27.	Cured, Feb. 14, 1868.
J. H. 13	Acute necrosis of femur and suppuration of knee-joint.	Amputation of thigh at junction of upper and middle thirds by Teale's method.	3	46 ,,	Hæmorrhage after needle withdrawn from femoral. Stopped by digital pressure for a few minutes. Hæmorrhage recurred nextday, and arrested by digital pressure on femoral for 5 hours.	Jan.28, 1868	Cured, June 12.
P. C. 40	Compound comminuted fracture of leg.	Amputation three inches above knee-joint by oval flaps.	2	48 ,,	No hæmorrhage.	Jan. 30.	Cured, March 3.
F. A. 15	Scrofulous disease of ankle-joint.	Syme's amputation at ankle-joint.	2	48 ,,	No hæmorrhage.	Feb. 15.	Cured, March 31.
E. W. 21	Compound fracture of left thigh and right leg.	Amputation through trochanters of left thigh, and immediately below knee-joint of right leg.	4	—	No hæmorrhage.	April 7.	Died from shock 6 hours after operation.
S. H. 50	Scirrhus of breast.	Excision of breast.	1	36 ,,	No hæmorrhage.	April 15.	Cured, May 29.
E. B. 43	Scirrhus of breast.	Excision of breast.	2	56 ,,	No hæmorrhage.	April 17.	Cured, May 26.
M. A. R. 42	Scirrhus of breast.	Excision of breast.	1	48 ,,	No hæmorrhage.	April 18.	Cured, June 9.
E. C. 11	Scrofulous disease of ankle-joint.	Syme's amputation.	1	50 ,,	No hæmorrhage.	April 28.	Cured, June 26.
A. C. 15	Dry gangrene of hand.	Amputation through lower third of fore-arm by Teale's method.	1	50 ,,	No hæmorrhage.	May 10.	Cured, June 15.
S. L. 47	Scirrhus of breast.	Excision of breast.	1	52 ,,	No hæmorrhage.	May 22.	Cured, June 13.
F. D. 53	Scirrhus of breast.	Excision of breast.	1	54 ,,	No hæmorrhage.	May 22.	Cured, June 16.
M. A. 52	Scirrhus of breast.	Excision of breast.	2	50 ,,	No hæmorrhage.	June 10.	Cured, July 17.
H. H. 17	Comminuted fracture of foot.	Amputation below knee-joint by modified skin flaps.	2	120 ,,	Hæmorrhage on 5th, 20th, 21st, 22d 23d, 25th, & 42d days, arrested by tourniquet.	June 22.	Cured, Sept 6.
J. W. 14	Compound comminuted fracture of hand.	Amputation through wrist-joint.	1	48 ,,	No hæmorrhage.	July 20.	Cured, Aug. 21.
C. C. 25	Scirrhus of breast.	Excision of Breast.	1	53 ,,	No hæmorrhage.	July 20.	Cured, Aug. 23.
A. N. 15	Wound into knee-joint followed by suppuration.	Teale's amputation in middle third of thigh.	2	48 ,,	No hæmorrhage.	Sept. 2.	Cured.

Extracts from British and Foreign Journals.

Intra-uterine Injections in the treatment of Diseases of the Womb.—Dr. Riegel thus sums up the conclusions of a paper on this subject:—1. Intra-uterine injections can be employed without any danger whatever, by the observance of certain precautions. 2. Before every injection the sound must be introduced for the purpose of exact diagnosis, and of rectifying flexions which are not complicated with adhesion. 3. It is absolutely necessary, before making an injection, to dilate the cervical canal and os internum sufficiently to allow of a complete digital examination, and the easy escape of the injected fluid. 4. The uterine cavity must always be cleansed from its ordinary secretion before the injection is applied. 5. Ulcerations or granulations of the portio vaginalis, in the cervix, or in the uterine cavity, had best be previously cauterized with nitrate of silver, or similar agents, so as to prevent the other parts from coming into contact with the caustic: however, these ulcers, &c. being only secondary phenomena, readily get well of themselves, when treatment is directed to the primary disease. 6. Peri-uterine affections are not an absolute contra-indication to intra-uterine injections, but the latter can, in such cases, only effect a momentary reduction of particular symptoms, and they may easily prove dangerous. 7. The temperature of the injected fluid must be regulated according to the object of the injection, and in most cases should be almost the normal bodily temperature. 8. Intra-uterine injections are not merely able to arrest for the moment certain symptoms, such as hæmorrhage, but under certain favorable circumstances it becomes possible by their means to moderate, and often to entirely cure, diseases both of the mucous membrane and of the uterine tissue. (*Deutsches Arch. f. klin. Med.* vols. v. and vi.)

The Elimination of Quinine by the Kidneys.—An important series of questions is raised by Dr. H. Thau with regard to quinine. It is notorious that a part of every dose taken escapes in the urine. Dr. Thau asks:—1. How large a proportion of every dose of quinine taken is eliminated? 2. How is the elimination distributed, as to time? 3. In what relation does the elimination stand to the effect of the drug upon the body? As to No. 1, the author's researches give the following

results: in *health*, the administration of 6 grammes (94 grains, equal to 70 grains of pure quinine) of sulphate of quinine, in three series of experiments, was followed by elimination of only four per cent. less than the total quantity ingested within forty-eight hours; and the small loss is probably due to some fallacy in the analytic process. In some subcutaneous injections made on dogs, the author also observed a copious *salivation*, and elimination of small traces of quinine in the saliva. It is plain that the question of Dietl—whether quinine passes quite unchanged through the blood to the nerves?—may be answered in the affirmative (as far as health goes). In typhoid, Thau found that the same thing happened as in health. There is no retention or decomposition of the quinine in the body, and the intestinal disease did not seem to hinder the absorption of such quinine as was not taken up from the stomach. It was remarkable that all the typhoid patients were much less affected by large doses of quinine than healthy persons; but this was explained in another way. As to the second question named above, Thau found, in all his experiments, that in health the elimination was most active during the first six hours after the dose, and was more than half finished by the end of twelve hours. Patients in febrile states also get rid of the larger part of the quinine taken within twelve hours; but, contrary to what happens with the healthy, more is eliminated during the second than during the first half of this period. With regard to the third question, the answer must be doubtful in the case of healthy persons, though the author believes that the durability of the effect of the quinine is in direct proportion to the quantity being eliminated. In diseased persons, where thermometry enables us to make more full and exact researches, the same rule is more clearly shown—the sinking of temperature caused by quinine taking place chiefly during the first twelve hours after the dose. (*Ibid.*)

Inhalation of Oxygen for the relief of Dyspnœa.—Dr. Andrew H. Smith, Lecturer on Therapeutics at Long Island College Hospital, U. S., reports four cases in which oxygen was used with marked effect. The first was one of pulmonary emphysema, dating from childhood. In this the momentary relief was great, but the effect soon passed off. The second was a case of spasmodic asthma; oxygen was administered during a paroxysm with great relief. The third was one of acute rheumatism, "upon which meningitis supervened." The pulse, which had been very rapid, was greatly diminished in frequency at each administration. However, the patient continued to sink, and died. Case 4 was one in which the gas was merely administered to promote the euthanasia of a tuberculous patient

dying in great distress from embarrassed breathing, and this object it admirably fulfilled. (*New York Medical Journal*, May.)

The Therapeutic Value of the Cinchona Alkaloids.—The following are the conclusions of a long report drawn up by Professor Ewart, of the Bengal Medical College, on the therapeutic power of quinidina, cinchonidina, and cinchonia. 1. *Quinidina* (*a*) is an excellent antiperiodic in from 20 to 10 or 5 grain doses. It is probably not inferior in power to quinine. It is easily tolerated by the stomach. (*b*) It is a good bitter tonic in from 3 to 5 grain doses. It may be combined with ferruginous tonics in anæmia. (*c*) It is less disagreeable to the taste and stomach than quinine; moreover its action is not accompanied with cinchonism. 2. *Cinchonidina* (*a*) stands next to quinidina in antiperiodic power. Dose, as an antiperiodic, 20 to 10 grains; as a tonic, 5 to 3 grains. (*b*) It is agreeable to the stomach, and is not followed by symptoms analogous to cinchonism. 3. *Cinchonia* (sulphate) is doubtless an antiperiodic, in doses of from 20 to 10 grains. (*b*) The irritability of stomach set up by it is *the* great objection to its ever taking rank as a substitute for either of the preceding alkaloids. (*c*) This may probably be obviated to a certain extent, by employing an efficient solution of it by the hypodermic method. (*Indian Annals of Medical Science*, No. xxv.)

Intestinal Obstruction cured by Enterotomy.—Cases of this kind are so rare that it may be well to mention one which was brought before the Société de Chirurgie by M. L. Thomas of Tours. The operation was performed, as usual, in the right flank, and and an enormous mass of fæces escaped from the distended cæcum, which had been sewed to the abdominal wall. In a few days the natural passage through the intestine was re-established, and everything went excellently well up to the twenty-fourth day, when a fresh accumulation of fæces occurred, in the iliac flexture. However, this was removed by the persevering use of enemas with a long tube; and the natural action of the bowels becoming perfectly re-established the artificial opening nearly closed of itself. The cure appears quite permanent. (*Journ. de Méd. et de Chirug. pratiques*, June.)

The Abortive Treatment of Erysipelas.—The clinical lecture of M. Schützenberger on the arrest of erysipelas by *turpentine* (already quoted in the *Practitioner*) has elicited some remarks on another "abortive" treatment for erysipelas, from M. Luroth. He says that for the last eighteen years he has successfully carried out the following plan:—Whatever the seat of the erysipelas may be, superficial scarifications are made upon it, each of which furnishes a few drops of blood. The cuts for the

most part run parallel to each other ; but two or three others are made in such a direction as to circumscribe the affected part, so as to form a barrier between it and the sound skin. The blood is smeared gently over the whole erysipelatous surface. This slight operation is usually at once followed by notable relief, not merely of the local symptoms but of the constitutional disturbance. If from ineffectual carrying out of this process the erysipelas overleaps the scarifications, it may be necessary to carry them somewhat further outward. Even where only a part of the erysipelatous surface can be scarified, the intensity of the fever is *pro tanto* reduced ; and the proceeding is equally applicable to the simple or to the phlegmonous variety of the disease ; even in *phlegmasia alba dolens* the author has found it produce marked relief. He attributes the good results to two things : the division of the skin relieves engorgement, and the blood smeared over the part forms a coagulated layer which protects it from the air. (*Gaz. Méd. de Strasbourg ; Bull. Gén.* Juin 15.)

Poisoning with a Lotion of Tobacco.—Dr. Blanchard records a very interesting case in which a man and his wife, desiring to rid themselves of the itch, applied vigorously to their skins a decoction made with 40 or 50 grammes of black soap, and 60 grammes of *tabac en carotte*, to 3 litres of water, boiled down to 2 or 1½ litres. The woman *wiped herself* with some little care, the man with less ; and they went to bed ; but the symptoms of poisoning soon developed themselves. Both patients were affected ; but whereas the woman was chiefly troubled with headache and vomiting, the man was plunged in a profounder depth of narcotism, the symptoms being stupor, viscous sweating, violent pains in the stomach, a sense of excessive coldness, and a constant desire to urinate. There were also jaundice, muscular tremors, and painful cramp, besides constant vomiting and stools resembling those of cholera. Both patients having been *washed*, to prevent further absorption of the poison, coffee with brandy was given, and a mixture containing acetate of ammonia, canella, ether, &c., in small doses every hour. This treatment brought both the patients round : they had each a rubeoloid eruption before complete recovery. (*Bulletin Général de Thérapeutique*, Juin 15.)

Phosphate of Lime in Pregnancy.—American physicians recommend the dietetic use of this salt in pregnancy ; as much as will lie on the top of a knife, at or soon after meals. This is for the twofold purpose of subserving fœtal ossification, and also preserving the mother's teeth, which are rather apt to suffer from a process of absorption, during pregnancy. For similar reasons the phosphate is given to suckling women, and especially to children who are artificially fed, in order to prevent

rickets, scrofula, and tuberculosis. (*Der Zahnarzt*, 1869. *Der Prakt. Arzt*, Mai.)

Treatment of Syphilitic Waxy Liver.—Dr. Wetzlar, of Aix, lays down the principle that there is no way of cure for syphilitic waxy liver, except by specific treatment. If the patients have as yet taken little or no mercury, this is the principal remedy. The author has himself found corrosive sublimate to be the most rapidly-acting mercurial preparation in waxy liver. Where there is a tendency to intestinal catarrh, especially in seasons when diarrhœa is prevalent, and also in patients who are decidedly anæmic, Wetzlar prefers the use of mercurial inunctions. Where mercury has already been administered to a sufficient extent, iodide of potash must be employed, which is only active against syphilis (says the author) when it follows a previous mercurial course (!). The diet must be nourishing and easy digestible; and, as all patients bear mercurial treatment better if they are not deprived of fresh air, free exercise out of doors is to be recommended. The author especially recommends the use of the sulphur-waters of Aix, together with mercury and iodide of potash: in the morning while still in bed, the patient should drink several glasses of the thermal water, fasting; then take a bath; and thrice daily at meal-times should take $\frac{1}{10}$ grain of the bichloride, or else have an inunction of half a drachm of mercurial ointment every night. If iodide of potash be given at the same time with this, the patient should take several doses of the iodide during the day, and have the mercurial friction at night. (*Deutche Klin. Der Prakt. Arzt*, Mai.)

Treatment of Syphilis.—Dr. J. K. Spender thus sums up the therapeutic conclusions of a series of papers. 1. For the secondary forms of syphilis, iodide of potassium given in the most eligible form, in moderate doses, with blue pill or some analogous preparation. 2. The double compound of iodide of potassium and bichloride of mercury may be necessary for treating syphilitic inflammations of the deeper tissues. 3. The bichloride of mercury is valuable for removing the intermediary squamous syphilides. The pure iodide of mercury is recommended by Mr. Squire. In doubtful cases, bichloride of mercury may be added to arsenic. 4. The earlier tertiary phenomena of syphilis are relieved by the double compound of iodine and mercury just named; the later ones by large doses of iodide of potassium. Sometimes even cures may be effected. Tonics are generally useful subordinate agents. 5. Infantile syphilis always requires mercury. 6. In otherwise intractable cases the mercurial bath and the hypodermic method of intro-

ducing mercury into the system should be rendered available. (See *Lancet*, June 26.)

Cantharides in some Forms of Pyelitis.—Professor Edward Mackey, of Birmingham, records some interesting observations on this subject. In two cases of severe pyelitis he administered two doses of cantharides, in doses of two or three minims (in one case gradually increased up to fifteen minims). The effects of the medicine appeared to be direct and decided, but its use must be strictly limited to conditions of chronic irritation. When acute paroxysms come on, it has to be discontinued, under penalty of doing harm instead of good.

On the Antiphologistic Action of the Galvanic Current.—Dr. Sycianko, of Charkow in Russia, has been led by his own experience to a firm conviction that the galvanic current possesses, in the highest degree, the power to reduce both chronic and acute inflammations. We have no space here to analyse the cases which he gives; but some account of this method may be interesting. He places on the inflamed part a silver plate connected with the positive (copper) pole of a battery of twenty Meidinger's elements; the other electrode, in the form of a knob covered with paper soaked in solution of salt, was placed on the corresponding part of the neck (this case was one of gingivitis): both electrodes were kept fixed on for two and a half minutes. The direction of the current was thrice changed, with a commutator, during this period. On the removal of the electrodes the inflammatory swelling was found notably softer, and less tender to touch; and the inflammation practically cured by the one galvanic *séance*. In other cases analogous results were obtained by the treatment. (*Berlin. Klin. Wochensch.*)

Changes in the Blood and tissues produced by the Administration of Silver Salts.—An elaborate series of pysiological researches by Dr. Bogolowsky, of Moscow, have conducted that observer to the following important conclusions. As regards the influence of silver salts on the blood, he states: 1. Silver produces a decidedly antiplastic effect on the blood, by means of which it makes that fluid more fluid, darker and more prone to the production of ecchymosis and effusions, the hæmoglobin dissolved in the plasma gradually changing to a biliary pigment: a longer continuance of the influence produces chlorosis. 2. The blood corpuscles (inasmuch as, under the influence of the silver, they give up their hæmoglobin to the plasma) become transparent and pale, and exhibit various qualitative changes (transparency, inequality of colouring, granulation) and alterations in shape (the long oval form the appearance of a double contour). 3. The hæmoglobin of the blood corpuscles

passes gradually into hæmatine, and the latter into a yellow colouring matter, in consequence of which the gall-bladder is constantly distended with a dark green bile. 4. The quantity of hæmoglobin in the blood is diminished under the influence of silver. 5. Silver does not appear to pass into the blood cells, as had already been observed by Schumowsky.

All these changes are produced with more or less distinctness, according to the activity of the silver salt which is operating on the blood; the pure nitrate has the strongest influence in this respect. Next to it come the double salt of silver and soda, $(Na\ O\ SO_2\ O_2) + Ag\ OS_2\ O_2 + 2\ HO$, and the peptonate of silver.

The changes in the *blood* and its oxidation are well known to be intimately bound up with the structure and formation of *tissues*. Further researches were made upon the influeuce of silver upon the latter; and the following conclusions were arrived at: 1. The quantity of urine was generally diminished, while its specific weight was increased; the evacuations were notably increased, and coloured dark yellow, or like chocolate. 2. The fluctuations of temperature are not particularly remarkable; nevertheless there was a pretty nearly constant lowering of temperature, by a few tenths of a degree, both in acute and in chronic silver-poisoning. 3. Of the various salts, the double salt above-mentioned has the most intense action on the organism on account of its greater rapidity of absorption. Rabbits which were injected subcutaneously with doses of from 0·156 to 1·56 grain of this salt, died from exhaustion about the fortieth day after the experiment, after receiving, on the average, about forty-seven grains. Given by the stomach, in doses of from 0·156 to 7·8 grains, it caused death by the forty-sixth day; an average of about thirty-four grains having been consumed. 4. Next in activity to the double salt come the peptonate and the albuminaet of the nitrate, and then the pure nitrate itself. The other salts of silver, being less soluble, act more feebly on the organism. The peptonate and the albuminate, in doses of 0·78 to 7·8 grains, killed rabbits by the forty-third day; an average of sixty-three grains having been used. Pure nitrate killed these animals in the same time when given by the stomach in 0·78 to 7·8 grain doses, up to a total of ninety-seven grains. In the latter case the influence expended itself chiefly upon the gastric mucous membrane, and but a relatively small part went directly, in the form of peptonate, into the blood, in case the conditions for this formation were present. 5. Silver, *delayed* in the body, produced material changes in the organs; these changes were most conspicuous in the blood, as above remarked, and the following were observed in the mucous membrane or analogous tissues:—(*a*) The mucous membrane of the air tubes and of the intestines was

catarrhally affected by the prolonged use of the agent, gastric or subcutaneous. In the epithelial elements of both kidneys and liver the development of these peculiar morbid processes were repeatedly observed. (*b*) The liver-cells and the epithelium of the canals of Bellini were mostly in a condition of cloudy swelling, or else of fatty degeneration. The liver was sometimes found congested and enlarged; sometimes, on the contrary, reduced in size and anæmic. (*c*) In the urine of animals who had long taken silver the presence of albumen was in many cases detected; in such instances the medullary cones of the kidneys were richer in blood than the cortical layer. (*d*) The gall-bladder was in the majority of cases found distended with a large accumulation of bile. Correspondingly with this excessive overflow of bile, the intestinal evacuations, as already remarked, contained a notable admixture of this fluid, in which the presence of silver was detected by appropriate chemical tests. (*e*) Besides the liver and the kidney, the silver extended its influence to the muscular tissues. In various researches changes in the muscular fibres of the heart were observed, which were analogous to the morbid processes in the other organs above-mentioned; the fibres were increased in circumference, and were cloudy, with a large quantity of granular substance, which, on addition of acetic acid, vanished; the transverse striæ were obliterated; and, not rarely, enlargement of the nuclei of the sarcolemma was observed; a thoroughly developed fatty degeneration of the muscular fibres of the heart was, however, not seen, even in a single case. Similar changes were simultaneously found in the other muscles of the body. (*f*) The fatty tissues were in most cases atrophied, and the intermuscular cellular tissue often in a state of "mucous" degeneration. (*g*) A universal blood-stasis (repletion of all the veins of the body with a very fluid blood containing coagula, hypostasis of the lungs, repletion of the vessels of the medullary cones of the kidneys) was the general phenomenon found, on dissection, in all animals killed either by acute or by chronic poisoning with silver. Not infrequently there was transudation into the two pleuræ, and into the pericardial sac, in consequence of this blood-stasis. (*h*) In many of the observed cases the urinary bladder was found distended in consequence of disease of the spinal cord, which was usually developed some days before death in animals which died of chronic silver poisoning. (*i*) The continued administration of silver in progressive doses causes a loss of weight, and visibly destroys the nutrition, so that an impoverishment and a chlorotic transformation of the blood are produced. This last occurrence takes place most rapidly when the silver salt has been administered by means of subcutaneous injection.

The cause of the general venous blood-stasis, which is equally

observed in acute and in chronic cases, is believed by Bogolowsky to reside in the affection of the heart and of the apparatus of respiration. In fact, in all the cases of acute silver poisoning observed by him the heart's action was constantly interfered with, and the breathing was irregular and rapid; from which, again, it would naturally result that the lungs would be congested, and that the veins in every part of the body would be overfilled. Correspondingly to these acute symptoms of acute silver poisoning, there are, in the more chronic cases, changes in the muscular walls of the heart (cloudy swelling of the muscular fibres, appearance of granular matter, and multiplication of the nuclei of the sarcolemma,) a circumstance which doubtless must act so as to materially alter the functional activity of that organ.

It is less easy to explain the origin of the remarkably pronounced *catarrh* of the stomach and intestines. It is tempting to say that the blood-stasis is the cause of it all; for, in fact, such stasis is the most common cause of catarrh. But where resides the source of the material changes in the liver and kidney elements which have been described especially as cloudy swelling and fatty degeneration? Perhaps the constant irritation of the tissues, from the deposition of silver in them, produces it, as in Stuart's experiments on cauterisation of the muscles of the frog something similar took place. That this kind of thing does not take place in the present case is, however, shown by the fact that, on the one hand, not the slightest traces of such irritation have been found, and, on the other hand, the constant presence of the silver completely excludes the possibility of such an assumption.

It is, therefore, more natural to attribute this process to the previous changes in the blood, and to the interference with oxidation—a phenomenon which is also produced by other metals, analogous to silver in their action. In fact, the blood of animals poisoned with silver is wanting in colour: the blood globules, having gradually given up their hæmoglobin to the plasma, have become pale. In this way the oxidation process must continuously more and more diminish, and that in constant proportion to the operation of the silver; and thereupon the metamorphosis of tissues must be interfered with and delayed, which reasonably corresponds with the fact which Bogolowsky has constantly observed—the lowering of temperature.

Such are the phenomena with which the momenta for the development of passive processes, and a consequent destruction of the tissues, present themselves.

Although, therefore, Bogolowsky by no means overlooks the *direct* action of silver, both on the vegetative function of the tissues in general and on the chemical processes of combination

and decomposition, he nevertheless believes it may be assumed that one of the most important causes of the appearance of fatty degeneration in these organs, which are similarly affected in poisoning with arsenic, phosphorus, antimony, manganese, &c., is dependent on the lowered functional activity of the blood corpuscles, which have been robbed of their hæmoglobin.

In almost all dissections of animals dying from long-continued silver poisoning the great distension of the gall-bladder was seen: a phenomenon which possibly may be referred to an extraordinary escape of bile colouring matter from the blood, consequent on the continuous dissolution of hæmoglobin in the plasma, and the other changes of that substance.

As to the origin of the marasmus, to which the rabbits experimented on always fell victims, Bogolowsky explains it by the operation of the poison on the blood; but, on the other hand, it may not impossibly depend on the obstacle to absorption of nutritive matters caused by the gastric and intestinal catarrh, which reaches such a high development. It is also possible that each of the two causes here mentioned is partly responsible for the result. (*Virchow's Archiv*, vi. 4, 1869.)

[I make no apology for the unusual length of the above extract, as the importance of the subject seems to justify it. No doubt these researches are of very high value indeed. And yet—just as in the case of the mercury experiments of the Edinburgh Committee—we are met immediately by the objection, very difficult to answer, that these experiments were made on healthy animals, whereas we want to know the action of silver salt in *disease;* and secondly, that it is quite possible the use of much smaller doses would have produced quite different effects. However, it is much to know what really is the nature of the more early forms of silver *poisoning*. The truly therapeutic conclusions must come later.—Ed. *Practitioner*.]

Notes and Queries.[1]

Arsenic in Herpetic Ophthalmia.—Mr. W. Spencer Watson writes to us as follows:—"Mr. R. S. Oglesby's remarks on the herpetic form of strumous ophthalmia are very valuable—chiefly, I think, from the great promise of the remedy which he proposes and which he has found so useful in practice. I would venture, however, with great diffidence to question whether the name he has given is appropriate to the disease of which he gives so graphic and account. Such symptoms as Mr. Oglesby describes are extremely common in strumous children, but the eruption on the face has always appeared to me more allied to eczema than to herpes. Herpes on the face is according to my experience very uncommon, and particularly so in young children. I beg to congratulate Mr. Oglesby on the discovery of a remedy for a disease which is under ordinary circumstances very troublesome, and in many cases almost impossible to reach by the remedies in use."

Arsenic a Cause of Shingles.—Dr. R. Sisson writes to us thus:—"From the number of cases of shingles which I have seen occur during the exhibition of arsenic I have come to the conclusion that they stand to each other in the relation of cause and effect, and are not mere coincidences. I myself suffered from shingles after taking five minims of the solution of chloride of arsenic thrice a day for a fortnight. By leaving off the drug, and taking a saline aperient, the disease at once disappeared."

Susceptibility of the Skin of Neuralgic Patients to Blisters.—Dr. T. King Chambers has addressed an interesting query to us, which we are at present unable to answer satisfactorily, and we invite our readers to assist us with the results of any careful observations which they may have made on the subject. The question is, Does neuralgia generally diminish the

[1] The Editor, being desirous of making this department a useful medium of communication between practitioners, will be glad to receive short notes on theoretical or practical points in therapeutics,—brief jottings on those numerous queries which suggest themselves from time to time to a medical man as he "goes his rounds," but which he has neither the time nor, in some cases, the opportunity of answering. The Editor does not pledge himself to reply to every question addressed to him, but he hopes to make the "department" the means of supplying the information required; and this he can only effect by the hearty assistance of his readers.

susceptibility of the skin of the painful parts to the vesicating action of cantharides? Dr. Chambers has observed a certain class of neuralgic cases—those, namely, which are associated with mental depression and hypochondriasis—in which this deficient power of reaction in the skin does appear to exist, and he inquires whether the fact is true of other forms of neuralgia. So far, the evidence which we have been able to obtain on this point is conflicting, but we invite further communications from those of our readers who have had large experience of the treatment of neuralgic affections.

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[1]Any of the foreign works may be procured by application to Messrs. Kelly, Piet & Co., 174 West Baltimore Street, Baltimore.

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THE PRACTITIONER.

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Original Communications.

ON THE THERAPEIOLOGY OF EKZEMA.

BY ERASMUS WILSON, F.R.S.

The term "ekzema" dates back to a period of one or two centuries before the Christian era, and is met with in the works of Dioscorides Phakas. The orthography of the term which I have here adopted is that of the Fathers of Medicine, the ancient Greeks; and as our present age may be regarded as one of revival of dermatology, as far as Great Britain is concerned, I venture to suggest that the ancient method of spelling the word should be preserved, as being not without advantages which to the student of dermatology may seem to be important. The signification of the word "ekzema" is simply *eruption*, as though it would impress the idea of a well-recognized and universally distributed disorder of the skin, such, in fact, as ekzema exists amongst us at the present day. This term is more general in its comprehensiveness than the more ancient word *psora* of the Hippokratic period; or than the *scabies* of the Latins, although both these terms are usually regarded as being in their original signification synonymous with ekzema.

Therapeutically considered, ekzema is an inflammation of the skin, attended with disorganization of its structure; that is to say, with exfoliation of the cuticle and exudation. Or, in dermatological language, it is a hyperæmia, with the superaddition of a multiple, pathological lesion; namely, with epidermal exfoliation, with fluid exudation, with incrustation, the latter resulting from the desiccation of the exuded fluids, and with tissue infiltration. Therefore our treatment of ekzema is simply a treatment of inflammation; but with an appreciative discrimination of the stage and of the degree of the inflammation. Thus our first effort in the way of treatment should be to procure rest and tranquility to the inflamed part, to maintain the normal status of the disordered tissues, and to exclude every foreign source of irritation.

Let me illustrate my proposition with one of the simplest of examples; namely, a cut finger. What should we do in the instance of a cut finger? Why, we should apply a bandage, which we should adjust carefully, and leave nature to accomplish the rest. We need no pharmaceutic help; nature herself has provided an adhesive bond for the cut edges of the wound in the recently effused blood, while we secure the scientific objects of maintaining rest, position, tranquility, and the ordinary conditions of normal function. And this is the principle of treatment of an ekzema. We apply our bandage to exclude the atmosphere; to prevent variations of temperature; to support the enfeebled tissues; and with the necessary consequence of a gradual return of normal function and a restoration of the tissues to a state of health.

But it may be very truly said that, although this simple expedient will suffice for a cut finger, it might be inapplicable to a face wound or to a variety of wounds in other situations. This is very true indeed, and the answer is obvious: the medical practitioner must always go about with his head upon his atlas and with a reasoning mind constantly at work within the confines of his cranium; it is just this that proves the necessity of medical education and distinguishes the learned from the unlearned, the expert from the pretender. We must be able to adapt ourselves to the particular circumstances of the case; we may have to vary our means to suit a multitude of altered con-

ditions; but the principle is unchangeable—adjustment of surfaces; rest and support of tissues; protection from every source of irritation. It may be sufficiently easy to keep together the incised surfaces of a cut finger; but to keep together the cut surfaces of a cleft palate requires genius, judgment, and skill. Then it is that we hear the word "difficulty" pronounced; difficulty of what? It is a mere question of keeping together two cut surfaces. Why, difficulty in the adaptation of our means. And it is in the little impediments to the proper adaptation of our means that alone lie the difficulties of treatment of that very obstinate and troublesome affection ekzema.

Let us take one of the commonest examples of ekzema, namely, ekzema of the leg; how should we proceed with its treatment? It is red, hot, exuding a discharge and raw in some parts, encrusted with scabs and sordes in other parts; covered with desquamating cuticle around the circumference, and exhibiting small itchy pimples beyond the desquamating border. Moreover, in addition to all these surface lesions, the derma is thickened from infiltration, and the limb more or less swollen from the extension of infiltration in the subcutaneous areolar tissue.

Now, if there were no lesion of the derma beyond the hyperæmia with infiltration and œdema, the practitioner would not hesitate for an instant: the treatment of the cut finger, a nicely adjusted bandage, is clearly the remedy. But the presence of other lesions—for example, the raw exuding surface, the copious discharge, the crusts, the dry desquamating cuticle, and the papulæ distributed upon the adjacent skin—constitute an apparent complication, and this complication demands a modification of our bandage treatment. Let us inquire into the special conditions constituting the complication, and then let us consider in what the modification of treatment should consist. The complication is represented by, firstly, and excoriated secreting surface; secondly, a dry, parched, exfoliating cuticle; and, thirdly, and erythematous and papular exanthem. Each of these conditions requires its own particular remedy, and these must be provided before the bandage is applied. For the first indication,—namely, to sheathe the excoriated surface, and also to moisten the dry crusts,—we can have no better remedy than the

linimentum calcis, which should be applied by means of a soft brush. For the second indication, we shall require the benzoated oxide of zinc ointment, which should be thoroughly distributed by means of the point of the finger over the whole of the desiccated surface. And for the third indication, we may employ a powder composed of starch, oxide of zinc, and camphor, to be dredged upon the erythematous and papulous part of the skin. This being done, we take strips of linen about two and a half inches in breadth and of sufficient length to encircle the limb, as in the instance of the tailed bandage, and having spread these strips with the benzoated oxide of zinc ointment, containing from five to ten grains of glacial carbolic acid to the ounce, we apply them smoothly to the limb, beginning at the lowest point of the eruption and proceeding upwards until the whole of the morbid surface is included. All this being effected in the most approved surgical fashion and with the "lady's hand," the bandage may be carefully applied.

I need hardly enter into an explanation here of the reason of the common remedy for burns, the linimentum calcis, being that which is the best suited for the excoriations; neither need I relate a tale that I have so often told already, that a thin stratum of oxide of zinc ointment is, at one and the same time, a poultice, a water-dressing, and a sheathing plaster, without the disadvantages of those applications. Nor need I explain that the erythematous and papulous skin presents those conditions of irritability which would very possibly be provoked into positive outbreak by the use of any ointment or moist or greasy application whatever, whereas a thin layer of absorbent powder rendered sedative by the addition of camphor will soothe the sensitive skin and prevent pruritus. Carbolic acid I have found a useful addition to the oxide of zinc ointment; it is perfectly unirritant in the proportion mentioned, and it would seem to conduce to the more rapid healing of the skin by its mildly stimulant and antiseptic operation.

An ekzematous limb nicely packed up and bandaged in the manner described may be left undisturbed for one or even for two days. Exudations very rapidly dry up, excoriations heal, crusts loosen and come away with the straps, or are easily displaced, desquamation gradually ceases, and the skin is restored

to its healthy smoothness, sensibility and integrity. Discharges, if any be present, may be wiped away with a soft cloth; by the same means loosened crusts and scales may be removed, and then the dressing should be resumed in the same manner as at first, or if the excoriations be healed then the linimentum calcis may be omitted. Water should be carefully avoided in effecting the cleansing process, and unless a water-dressing be thought desirable for a short period and for a special purpose, such as the removal of heat and pruritus, should never be used.

It may be stated authoritatively that whenever a bandage can be applied, it constitutes a necessary part of the treatment of ekzema; but in ekzema, as in every other disease of the human frame, there exist a multitude of variations of symptoms that demand from us an equal variation or modification of our manner of procedure. There are parts of the human frame upon which the application of a bandage would be impossible; I may instance the pudendum and perineum, the axillæ, the neck, the apertures of the body generally, and deep folds of the skin such as that behind the ears; and these are all parts in which ekzema is common. Now, in every case of this kind the art of the surgeon will be shown in obtaining the results of the bandage as far as may be practicable, without the bandage itself. He may be unable to procure the support of tissues which would be derived from a well-adjusted bandage, but he may succeed perfectly in excluding the contact of irritants, and particularly the atmosphere, and he may preserve the inflamed skin in a state of comparative tranquility and repose. And this is to be effected by two of the pharmaceutical agents already mentioned, namely, by that admirable remedy for all affections of the skin, the benzoated oxide of zinc ointment, and by the powder of zinc and starch. My instructions to my patients are generally summed up in these words: Avoid washing the eruption, wipe it with a soft cloth if it need cleansing, but on no account use water; and keep the surface constantly covered with a thin coating of the zinc ointment, contriving, as completely as you are able, to prevent the removal of the ointment; lastly, whensoever the ointment is accidentally rubbed off, repeat it again; the best instrument for spreading it on the affected skin being the point of the finger.

Let me illustrate my method by another example, in which the application of a bandage is out of the question, and wherein the zinc ointment and the diluted zinc powder furnish brilliant results,—namely, in ekzema infantile. In these sometimes terrible-looking cases, the two grand remedies are: 1. Avoidance of water; and, 2. A copious use of the benzoated zinc ointment, with the addition, under certain circumstances, of the linimentum calcis and the diluted zinc powder. It is sometimes curious to see the wonder of mothers when they are told to abstain from all washing of their children until the skin is sound. And yet a moment before, they have been feelingly narrating the increase of irritation and suffering that constantly follow the bath. No, is our answer; keep the skin as free from dirt as you please by means of a soft cloth, but always replace the ointment wherever it has been rubbed away, and by all means avoid water in every shape, and disturb the inflamed skin as little as possible. Perhaps we may be asked: What is to be done in case of an exacerbation of itching? We should then say: Rub the surface gently with the zinc ointment; or sponge the itching part with a sponge squeezed out of hot water; or press the hot sponge upon the itching part; but when the sponging is over, and the skin is dried, replace the ointment as before. Often, we are told that the itching is intense at night, and the skin hot and inflamed; in this case, we direct that a piece of rag saturated with spirit lotion should be placed on the heated part, and exchanged for a similar piece as often as it may become dry.

The instance of ekzema infantile brings before us another illustration of modification of treatment which is the very essence of medical science, or rather of medical tact and genius. The zinc ointment which is so admirable over the whole body and face of an infant as to deserve to be called the sole reliable remedy, is mischievous in the extreme when used upon the scalp. Its tenacious and desiccant qualities, and its tendency to concrete, so excellent in their adaptation to a smooth surface, become inconvenient and troublesome on the head, by matting the hair, detaining secretions, and forming a dense and unmanageable cap. Hence, while for the general surface of the skin we should recommend the zinc ointment, for the scalp we

should prescribe one of a more diffluent character, such as the nitric oxide of mercury, considerably diluted, say one part to eight of benzoated lard; or the ammonio-chloride similarly diluted.

The treatment which I am now describing is that which is applicable to the acute and sub-acute stages of an ekzema; but beyond these and at a more advanced period we have stages of chronicity of every degree. To return for an instant to the language of the Greek Fathers, we have the moist psora and the dry psora; in other words, the psora and the psoriasis; and the latter so altered in characters by prolonged continuance as to have been regarded as a separate affection. Who, for example, hesitates to term a dry squamous ekzema of the palm of the hands and of chronic character a psoriasis palmaris, and yet no one doubts of its being what it really is, namely, a chronic ekzema. The essential pathological characters of a chronic ekzema are, thickening and hardening of the skin with desquamation, sometimes rhagades, sometimes ichorous exudation, and pruritus, more or less frequent and severe. If we inquire a little further, we may come to the conclusion that the essence of a chronic ekzema is tissue infiltration or cell infiltration; with a consequent degree of hypertrophy, and a greater or less degree of embarrassment of circulation and innervation. And if we carry our thoughts onwards to the inquiry, how this pathological state is to be remedied; the answer will be, by the aid of stimulants.

Thus it is, that while pressure by bandage, wherever practicable, and exclusion of external irritation, are equally beneficial in chronic ekzema with acute ekzema, we must seek further for our remedial armament among those external applications which are recognized as external tonics or stimulants. It is at this stage and in this form of the affection that we obtain good results from mecurial ointments, such as those of the red and white precipitate, from sulphur ointment, and especially that of the iodide of sulphur; from nitrate of silver in solution; from ointments of tar, and notably that derived from the wood of the *Juniperus oxycedrus*, and also from kreasote and carbolic acid. The stimulation excited by the judicious application of these remedies causes the dispersion of the hyperæmia and thickening of

the skin and removes the infiltration, together with the pruritus and the hypertrophous generation of epidermis. It must be observed that these remedies require judgment in their use ; all are excellent for a particular purpose, but they must be employed at the right time and with the intention expected of them always present to the mind. They are tonic-stimulants when employed with moderation and judgment; irritants when used indiscreetly and in excess. And of their mode of action we must judge not only by the appearance of the skin, but also by the sensations of the patient.

There are some old surgical saws that have a place probably in the mind of us all, and a bearing on the question of the treatment of chronic ekzema and of the remedies proper to be used for the purpose ; such are : "the setting up of a new action" to replace the old and morbid process ; "the conversion of a chronic into an acute affection," or of a less manageable into a more tractable affection. And these ideas have suggested the application of a blister to a chronic circumscribed ekzema or psoriasis, and its subsequent treatment like an acute affection. Empirical treatment has also shown us that we may, by painting a chronic ekzema with a caustic alkaline solution, such as that of equal weights of potassa fusa and water, cause a copious exudation of ichorous fluid ; and that, following this application up by a palliative treatment, we may remove the thickening, heal the rhagades, and arrest epidermic exfoliation. It may be that the caustic solution will require repetition a second or a third time. But the principle of operation of the treatment would seem to be, to disgorge the skin of its infiltrated fluid, perhaps by inducing contraction of the bloated and hypertrophous cells, or perhaps by chemical exosmosis.

In the treatment of chronic ekzema, and after the cure of an acute ekzema, we also derive good results from saponaceous ablutions, particularly when aided by the juniper tar soap ; from cold affusion, and also from the use of the cold douche ; regarding these remedies as tonic-stimulants of the skin, and calculated to restore the exhausted nerve function and weakened tissue function of the affected integument.

In the treatment of disease, whatever its nature, we naturally give our first attention to the local suffering ; this is a matter of

necessity in surgical affections, and is not less so in diseases of the skin, to whatever extent they may owe their origin to constitutional disturbance or constitutional causes. Hence, while the local affection is important, the constitutional state of the patient is equally important; and I must not be supposed to think lightly of or to undervalue it, because I dispose of the local disorder before I inquire into the state of health of the patient. Ekzema is undoubtedly *local* in those instances in which it proceeds from disturbed inervation or circulation of the part, as, for example, from varicose veins; or follows wound or injury of a limb, or the presence of debilitating or irritant causes, and in these instances may require nothing more than local attention; but in the majority of instances it is the manifestation of a nerve irritability which has its origin in constitutional debility. In one series of cases, *nutritive debility*, either from deficiency of food or improper food, is evidently the predisposing cause, as in the instance of infants which have been deprived of their natural food, and in whom the endeavour is made to nourish them on substituted food. Allied with cases such as these are the examples of nervous and elderly persons in whom nutritive waste is more active than nutritive supply. While in a third series of cases, and these perhaps are the most numerous, the cause is referrible to mal-assimilation; and the digestive and assimilative organs are primarily at fault. I say nothing of diathesis, or, as Bazin would term it, of "herpetism;" because it is evident that diathesis must have its proximate predisposing cause, which is in no wise different from that which influences organizations of an opposite kind.

Thus in the case of ekzema infantile our remedies must be, in the first instance, *food* of a nutrient quality, and which harmonizes with the organism of the infant; nutritive substitutes, such as cod-liver oil in an emulsion with yolk of egg; and assimilative tonics, such as liquor arsenicalis in one or two minim doses in association with vinum ferri and dill water. In that form of nutritive debility which is dependent on nerve irritability and waste, the principle of treatment must be the same—namely, appropriate and nutritive food; three minim doses of liquor arsenicalis in conjunction with vinum ferri; and due attention to the functions of the digestive organs. I have

so often published my favourite formula, which I believe to be without peer, that it needs some apology for repeating it again; but I do so, because it will occupy little space and lest it may have been overlooked by those to whom I trust it will prove as useful as it has been to myself. My ferro-arsenical mixture is as follows:—Vini ferri, ʒjss; syrupi simplicis, ʒiijss ad ʒij; liquoris arsenicalis, ʒss ad ʒij; aquæ puræ, vel anethi, ʒij. The dose, one drachm, towards the end of the meals, three times a day.

Assimilative debility as a cause of ekzema presents a somesomewhat extended field for practical examination; for example, deranged digestion, deranged secretion, deranged assimilation, and the consequences of all these aberrations. Perhaps we may find that our patient has been running through the manifold variations of bronchitis, neuralgia, rheumatism, or even gout; and if our colleague Bazin were present, he would probably recognize an "arthritism." Practically the matter is of the simplest kind; regulate the function of the alimentary canal, secure the proper action of the liver, correct the lithic propensity, give tone to the stomach and vigour to the digestive and asssimilative functions, and the cure, *quoad* the constitutional power, may be considered as complete. Should a lingering eruption point to a continuance of peripheral nerve-debility, the ferro-arsenical mixture may be administered for any length of time that may be requisite. It is a rule, however, that is worthy of attention, that arsenic should always be held in hand as a reserve force, and employed only when all the animal functions have been regulated by their appropriate remedies, and when cutaneous nerve-force is all that remains to be consolidated.

ON SEATANGLE TENT.

BY J. BRAXTON HICKS, M.D. F.R.S. F.R.C.P.

Physician-Accoucheur, and Lecturer on Midwifery at Guy's Hospital, &c.

Of all the materials used for dilating the cervix uteri there are none so cleanly, efficient, and convenient as those made from the *Laminaria digitata*. Although now largely employed by many, they are not so well known as they deserve to be; and therefore allusion to the subject may not be altogether useless, nor some practical hints unacceptable to some readers.

This material can be made into tents of various forms and sizes, but as the dried stem of the alga usually employed does not exceed half an inch diameter,[1] tents required of a larger size must be made by fastening together a sufficient number. They may be grouped in three, five, seven, &c. But perhaps it will be found most convenient for the very large size to combine groups of three in one large bundle; they may be tied together by twine at the base, but at their apex it will be best to employ a small elastic band. These can be obtained ready made up.

Some are made in two halves pegged together. Some are made tubular to permit of the introduction of a stillet, which, passing two inches beyond the end of a catheter, forms an easy contrivance for reaching the os without the speculum, and also to permit the secretions to flow through it. The smallest sort, from $\frac{1}{12}$ to $\frac{1}{8}$ inch diameter, are used for dilating the rigid or contracted os and cervix, either alone, or preparatory to the use of the hysterotome. The tubular form cannot be made below a

[1] As other larger varieties of algæ will hereafter probably be found equally useful with the *Laminaria digitata*, it is desirable that investigations be made in this direction.

certain size, as it is found impossible to drill a hole through them if too attenuated.

I have found that they distend to about three times their original diameter, and that in an ordinary state of the secretions they reach their full distention in about fifteen hours; of course some variation will be found in this respect, especially between the different sizes, for the larger they are, the longer the time occupied for them to become wet in their interior, and therefore, generally speaking, the large bundles produce their effect quicker than if made of one piece of an equal diameter to the combined. These two points are important to bear in mind, because where we have to dilate the cervix to a considerable size, and we require to follow in succession, it is best to introduce the next sized tent as soon as the previous one has attained its full dilatation. To leave it in beyond that time not only delays the operation uselessly, but adds much to the chances of uterine irritation. We must therefore have at hand a series of three for general purposes. For instance, when we wish to dilate the cervix in order to pass the finger in easily into the cavity, supposing we begin with one of $\frac{1}{8}$ inch diameter; the next size should be nearly $\frac{3}{8}$ inch, and the last (if another be required) should be nearly 1 inch diameter: as this would expand to nearly three inches at its fullest, it would not be requisite to allow it remain in—unless in a case of pregnancy or imperfect miscarriage, where we want the fullest expansion—so long as to its complete expansion, say for ten hours. Where slight dilatation only is required then one is sufficient, and it should be removed in twenty or twenty-four hours at the longest. For dilating further, we may group the smaller bundles in any numbers we like, but it will seldom be required to go beyond an inch diameter for the last one. If we wish the tents to be more rapid, then it is best to soak them in cold water a short time before introduction.

The purposes to which they can be applied for obstetric purposes are numerous. They can be employed to dilate the smallest os and cervix uteri, either alone or in preparation for the hysterotome; they can for this purpose be made as small as required. In the case of a traumatic closure of the os uteri, I have employed it with complete relief. In closures of the vagina from injury,

also where the opening is reduced to a pin-hole, they may be employed to dilate up the stricture, preparatory to some more radical operation, or in some cases they may be employed entirely. The effect of the latter plan, however well it may succeed at the first, is liable to pass off, and the contraction to resume its sway. I have found that the bistoury lightly drawn over the contraction, in numerous places, attended by much more satisfactory results ultimately. After operation for opening either vagina or os uteri, these tents may be employed from time to time to prevent the closure recurring. They may be employed to dilate the cervix to a size sufficient to permit us to explore the interior of cervix or the body of the uterus, in cases where polypus is suspected, or where the remnants of an imperfect abortion is supposed to exist. For the same purpose they are of great value to permit us to diagnosticate between polypus and fibroid tumour of the uterus, where the hæmorrhage is so great as to require interference.

In cases of flexion of uterus they will assist to straighten out the canal of the cervix, and for a time relieve the patient of the dysmenorrhœa which frequently accompanies it.

Again, in cases of dysmenorrhœa and sterility in married women from contraction of cervix, they can be with great advantage used, because it is clear if the sterility be owing to the occlusion of the cervix, then its expansion should be attended by immediate relief; otherwise we may conclude that other causes exist which give rise to these states, and if after this dilatation the patient conceive, then a permanent cure results. In the single woman, however, the effects are less permanent, and in cases of severe obstruction will be frequently the only means of giving anything like permanent relief.

In some cases, as in malignant disease of cervix where the resistance is considerable, I have employed this substance to dilate, in order to deliver prematurely. These cases however are rare where much resistance exists, and in general it will be better to employ a softer material, as sponge tent, or elastic dilating bag, because they are less likely to scratch and abrade by their extremities than the more rigid seatangle tents.

They can be introduced into the cervix uteri in various ways.

First, they may be introduced by a long pair of forceps. The patient being placed on her left side, the fore-finger of the left hand, or still better two fingers if possible, are to be passed to the os uteri. The tent, held by the forceps, is carried along the finger to the os, into which it is introduced. The handle of the forceps should be then brought well against the perinæum, so as to throw the tent into the axis of the uterus (in cases of normal position) and very gently pressed forward; after it has passed in nearly its whole length, the forceps should be detached, and the fore-finger presses gently against the end of the tent to keep it *in situ*. In order to retain it there, it is well to pass a plug of sponge with a tape tied round it so as nearly to fill the vagina. It is well to see the uretha is not pressed on, or retention of urine might ensue, causing trouble and alarm. In multiparæ there is no trouble in employing this plan, but in some, particularly in virgins, there is much difficulty in introducing the tent in consequence of the rigidity and drawing up of the perinæum. Besides, unless the serrations of the forceps are carefully rounded off at the edges, the vulva and vagina may be scratched, not only causing pain, but adding to the difficulty of introduction in consequence of the movements of the patient.

Another, and in my experience a better plan, in cases where the extremely small tents are not required, is to employ an elastic catheter with a stillet. A portion of the end of the catheter not quite so long as the tent should be cut off. This will leave the stillet protruding. On this the tubular tent should be passed, care being taken to see the stillet does not extend beyond the end of the tent. The string which is attached to the lower end of the tent being carried down by the side of the catheter, is held by the same hand. The arrangement is then introduced as an ordinary uterine sound; and when the tent is properly within the cervix, the stillet is withdrawn, thereby leaving the tent in the cervix. The finger which is in the vagina should be placed on the lower end of the tent to prevent it sliding out and the sponge introduced as usual. A very convenient little instrument based on this principle has been made by Messrs. Weiss.

There is another mode which will be convenient in some cases, namely, to pass a speculum. Having introduced the

tent into the cervix as far as possible by a forceps, the speculum can be withdrawn carefully. A finger is then passed up to the tent, and gentle pressure being made the tent slides in. This plan is good in cases where retro or ante-flexion exists, but then of course it will be necessary when pressing the tent in with the finger to vary its direction, either forward or backward according to the axis of the body of uterus. In these cases the tent is ultimately placed in the transverse diameter of the vagina. In cases where the inner cervix will not permit the tent to pass, I have managed to do so slowly, by lodging the lower end against the fold in the posterior wall of the vagina, and then plugging that canal as usual. The little irritation produced by this has caused the levator ani to act, so that a gentle pressure is exerted for some time against the inner os, which has ultimately yielded. For the larger groups of tents, it will be found that the forceps will introduce them most readily; for in most of the cases where we wish to use large tents the vagina is so well relaxed, difficulty is rare.

It is very important in order to effective dilation that the tent should pass the inner os, in all cases where the cavity of the uterus is to be explored. Tents of all kinds may fail in this particular, for two reasons: one because they may not have been introduced so far: and another, because they slip out. This is particularly the case with the seatangle tents, but as they can be made smaller than any other kinds there is no reason why, if one will not pass, a smaller should not be tried. But it must be also remembered that the cause of inability to pass a tent may be from a flexion of the organ; this point of course should be first made out before we commence to pass the tent.

One means of preventing these tents from slipping out, at least after they begin to swell, is a plan adopted by some makers of tying the string round the lower end, so that it cannot expand so much as the upper: and this reminds me of a fault in many, namely, the shortness of the string attached to the lower end, and the imperfect security of the knot: so that it is difficult on the former account to withdraw it, and on the latter the cause of much trouble and sometimes pain when we wish to remove it.

Before the introduction of these, as of course with all tents,

it is important that the bowels be well open the day previous, and the bladder evacuated immediately before. Otherwise the disturbance caused by the action of the bowels is sufficient to cause expansion of the tent; with regard to the urine, its passage will of necessity be requisite twice at least during the twenty-four hours the tent is dilating; but as it is advisable that the patient should not rise up, she should be directed to pass urine without rising: or still better, if the catheter can be employed, that it should be used.

Upon your visit at the end of twenty or twenty-four hours the sponge plug is to be removed first, and then the tent, and the vagina syringed with warm water, to which a little of Condy's solution should be added. By this means any absorption of the unpleasant discharge (which is almost always present) through any abrasion is prevented. This is especially useful where a series of tents have to be introduced. It is not a bad plan to soak the sponge plugs in a lotion of permanganate of potass before introduction. Some sponge tents are made enclosing antiseptics, so that when they expand by the melting of the wax this material is set free. The same plan might be adopted in the tubular seaweed tents, but the quantity set free would not be so much. But the tent itself, independent of the plug, does not produce much unpleasant odour, while the sponge tents do so.

After the process of dilating the cervix by the tent, I consider it important, indeed I may say imperative, that the patient should keep quiet. In hospital practice I always enjoin a week's rest, and this plan I adopt in private, unless a couch can be substituted after a few days for the bed. The vagina is washed gently out with warm water twice a day, to prevent accumulation of the discharges, and irritation resulting from them.

Too much care cannot be taken after the employment of the tent, especially if done rapidly and to a considerable extent. The irritation in and around the uterus does not subside for some days: I should say a week or more, and if excitement of any sort arises, especially by exercise, this is apt to increase and become a matter of serious import. I have seen a case end fatally, where there had been dilatation a week previous;

mental shock, suddenly lighting up the inflammation and extending it to the peritoneum. I would therefore treat dilatation of the uterus as an operation of much more importance than it is by some practitioners; who, having introduced the tent at their own house, have sent the patients home, with directions to remove it in so many hours. In one such case the string broke away and the patient could not remove the tent. Severe cellulitis and metritis followed, which laid her up for many months.

But with the care above enjoined, this unpleasant result is obviated to a great extent. Probably in the slight dilitation produced by the use of the tent for a few hours, the risk in this respect is perhaps considerably less, and perhaps it is less when softer materials are used than the seatangle tent; but where free expansion of the cervix has been produced, the risk of subsequent trouble is readily seen if care be not taken, and this risk is much increased proportionately to the time occupied in tenting. I would say that the patient should never, if at all avoidable, be under the continuous action of these tents for more than two and a half days, at outside three. For this reason the tents should follow one another as quickly as consistent with efficiency.

During the presence of the tent in the cervix, it is not unfrequently found that the uterus becomes irritable, and expulsive pains occur. To prevent this as well as the consequent extrusion of the tent, it is well to give an opiate, especially should the pains appear. This will also lull the bladder and rectum, and thereby prevent their influence extending to the uterus.

In conclusion, I may point out the special advantages of tents made of seaweed.

1st. They can be made of any size, particularly much smaller than sponge tents.

2d. They have more distending power. The rigidity of the inner os uteri is sometimes so great that even these tents are distinctly marked by it; but the sponge tents not at all unfrequently are unequal to produce any marked impression on the constriction.

3d. They do not retain the secretions so as to produce so much offensiveness, consequently there is less risk of irritation locally or generally.

4th. By their greater rigidity they can be more readily applied, especially in a tortuous canal.

They have, however, some disadvantages:—

Their rigidity makes them not so suitable in cases where the uterus is readily bleeding, or very tender; nor in cases where the os is somewhat dilated by a polypus or growth distending it. Here a sponge tent is best unless the os and cervix are very rigid.

Their great distensive force makes them less acceptable where the uterus is very irritable.

They should be in all cases so made that no sharp edge be noticeable. In the tubular tents this is a point liable to be overlooked.

And for the dilatation of the os uteri in a natural state for purposes of induction of premature labour these tents are not by any means so suitable as the sponge tents, or as the India-rubber bags.

With these exceptions in cleanliness, certainty of action, ease of introduction, and minuteness, they are certainly not equalled by any other material at present in use.

PHTHISIS AND PHYSIC.

BY R. P. COTTON, M.D.

Fellow of the Royal College of Physicians, London; Senior Physician to the Hospital for Consumption, &c., Brompton.

If respect be had to the number of "cures for consumption," phthisis must be, of all diseases, the most curable. Unhappily, however, it has often turned out that the charlatan and not the patient has benefited by such "cures." In the days of our grandfathers *metallic tractors* were in vogue, and none who patronized them need have died either of consumption or any other disease. In the next generation *mud baths* were the great "cure;" and consumptive sufferers went to certain German localities to sit in mud, and afterwards to die of consumption. *Sleeping in cow-houses* then came into fashion, and soon afterwards the even less luxurious practice of *snail eating;* and I remember in my youth a gentleman—half hero and half dupe—who was said to have been cured by having lived upon this dainty gasteropod. Even in our own times we seem to have grown but little wiser, since the *grape cure* has had a successful run; and the *hypophosphites of lime and soda* are at the present moment advertised as a "*specific* for the prevention and cure of consumption;" whilst even *snake excrement* is being both prescribed and swallowed with hopeful expectations.

I wish very much that in the present communication I could introduce to the profession some veritable *specific* for phthisis. I must confess, however, that I have none such to offer, and I believe, from the very nature of the disease, that none will ever be found; although I am convinced that the Materia Medica affords many very useful auxiliaries for its treatment.

I believe that I have tried everything, and nearly everything

I have tried has seemed to do more or less good, at least for a time, in certain cases. Hence it is, perhaps, that in a less extensive field of observation so many different remedies have been extolled, even by the most honest observers. But the explanation is an easy one. Phthisis is strictly a disease of the system, and is consequently attended by a great variety of symptoms, according to the individual peculiarities of patients. Phthisis, too, is not always the same; there are, doubtless, many varieties as well as degrees of the disease. It is therefore, not surprising that we should have no *one* remedy for it, and that a number of very different medicinal agents should have been found more or less available in its treatment.

Although in the so-called "specifics" for consumption I have, as already stated, no faith whatever, yet I have thought it a duty to give some of them a fair trial.[1]

I have tried *phosphorus* and its many combinations very extensively. Of the *pure phosphorus* I gave from $\frac{1}{24}$ to $\frac{1}{18}$ of a grain dissolved in oil of sweet almonds two or three times a day, but with no marked effect except in some few instances, where it seemed to have the same general result as many other tonics and stimulants. Of *phosphoric acid*, both alone and in combination with iron, I have had abundant experience, and have found them—especially the simple acid—very useful in some cases of cachectic phthisis attended with loss of appetite. Of the much vaunted *hypophosphites of soda and lime* I have made and published numerous observations,[2] and I believe them to be simple alkaline substances, adapted, like many others of the same class, to certain cases of phthisical dyspepsia, but having no claim to be considered, as advertised, "*specifics*" for consumption.

Of *iodine* and its combinations I have made many experiments. From the pure iodine, given in doses of 5 m of the tincture two

Having been pressed by patients to try the *snake excrement*, and taunted with the accusation of being prejudiced against it, I gave it a careful trial, and published the result in the *British Medical Journal* for May 17, 1862. In the same number of that Journal are some excellent and amusing observations by Dr. T. K. Chambers, who had also been induced, for like reasons, to try the same "cure." It is perhaps hardly necessary to add, that both of us found the excrement about as potent a remedy as pump water.

[2] *Medical Times*, February 13, 1858, and November 14, 1868; *Lancet*, April 25, and May 2, 1863.

or three times a day, I have never observed any decided effect in either direction. From the *iodides of potassium* and *of iron*, however, but chiefly the latter, I have seen many very satisfactory results, and I believe the iodide of iron to be a valuable agent in the treatment of phthisis in children, as well as of those cases occurring at all ages in which there is much pneumonic consolidation, whether such be a cause or a consequence of the tubercular condition.

Arsenic has been much extolled by some of our French *confrères*. I have made many trials of it, but always with a very negative result. That arsenic is a valuable tonic in some depressed conditions of the system, and may be available as such in some cases as phthisis, I can readily believe, but as to its exerting any direct effect upon tuberculosis I have not the least faith.

Iron is a useful tonic in a great number of consumptive cases. From my notes I find that of the patients who have done best under treatment, by far the greater number were amongst those who took iron regularly and persistently. If the French school, however, has lately taken up arsenic as a remedy, it has at the same time given its verdict against iron. Some years back the late M. Trousseau expressed his conviction that iron both predisposed to pulmonary hæmorrhage and induced phthisis, and in this view he has had not a few disciples. It had been remarked by him, as indeed it had occurred to others, that the chlorotic form of anæmia was seldom associated with tuberculosis. He argued, therefore, that to cure this anæmia was to produce consumption. Chlorosis, however, is no more antagonistic to phthisis than are many other diseases. It would seem to be a general rule, to which of course there must be many exceptions, that two diseased or two dissimilar actions seldom go on simultaneously. The same argument, therefore, which M. Trosseau has applied to chlorosis, might with equal reason be urged against curing any other disease whatever. Such questions, indeed, can only be determined by experiment, and that the result of such experiment is quite opposed to M. Trousseau's view I am thoroughly convinced. From my own experience I am decidedly of opinion that hæmoptysis is no necessary consequence of the taking of iron; and that the

development of phthisis, so far from being favoured by the use of iron, is certainly controlled by it. Of the preparations of iron I prefer the *perchloride*—the old "tincture of steel"—of which I am in the habit of giving 15 minims with a drachm of syrup of lemon twice a day. In cases of acidity of stomach I often prescribe the *ammonio-citrate* of iron, with potash of soda. The *vinum ferri*, also, is an effective preparation, and is especially useful in infantile phthisis. I always give it immediately after meals, believing that in this way the iron is more readily taken into the system.

Quinine is well adapted to many cases of phthisis, as a general tonic in the earlier stages, and as a tonic and antiperiodic in the later stage after hectic fever has set in. Its various combinations with iron—upon which I need not enter—are also excellent auxiliaries to other treatment, by improving the appetite and lessening the exhaustive discharges to which consumptive patients are so liable.

The *mineral acids* also claim a high place amongst the tonics for consumption. In the absence of stomach irritation, the simple dilute *hydrochloric acid*, or the dilute *nitro-hydrochloric acid*, with a little syrup of orange or ginger, is often very useful in restoring the general tone of the system, increasing the appetite, and diminishing excessive cutaneous secretion.

The *alkaline carbonates* are not less available in many cases, especially where a furred centre, red edges, and prominent papillæ of the tongue indicate gastric irritation arising from acid dyspepsia. Among the worst and most intractable symptoms of phthisis are those depending upon dyspeptic complication; and in the formulæ of the Consumption Hospital is a compound of soda and gentian, with hydrocyanic acid, which, from its frequent usefulness, comes nearer to a "specific" than anything I ever prescribe.

Strychnine I have employed abundantly, but with very trifling success. It sometimes serves the purpose of a tonic, and is occasionally useful in the very distressing cases where sickness and loss of appetite are prominent symptoms, but more often than not I have found it, even on such occasions, less useful than many other agents.

Glycerine having been considered by many medical prac-

titioners scarcely, if at all, inferior to cod-liver oil, I have given it a full trial, and published the results.[1] From these observations it seemed to have very little effect upon phthisis in any of its stages; its supposed fattening qualities were not noticed; and in no particular could it bear comparison with cod-liver oil.

Bromide of potassium I have frequently prescribed both in early and advanced consumption, but I never saw from it any good result. So far as the disease itself or any of its essential symptoms were concerned, it never offered the least encouragement either to myself or to my patients.

Chlorate of potash I have also given in a considersble number of cases, hoping that its generally acknowledged tonic, antiseptic, and upholding qualities might have some influence upon the disease; but I found it of no special value, except perhaps in a few cachectic cases, in which it, as well as other agents of a similar character, sometimes prove useful.

I have prescribed large and regularly-repeated doses of *chloride of sodium* to a number of hospital patients, but without observing any effect either in one way or another.

Cod-liver oil must not be omitted in the therapeutics of consumption, although I regard it quite as much as an article of diet as of medicine. Although far from a *specific* in the disease, it is nevertheless a very useful auxiliary in its treatment, by nourishing the system, and making up for lost tissue, when many other things fail to do so. So much, however, has already been written, and so much is known about cod-liver oil, that it is unnecessary to enter into anything beyond a few practical remarks upon its effects. I believe that the pale and the dark oils are equally useful, and that the choice between them may be safely left to the patient, who, if of delicate stomach, is almost sure to prefer the pale variety. I have known some very remarkable cases of increase of weight under its use, several of my hospital patients having gained nearly two stone during the ten or twelve weeks they have been under treatment. Such great increase of weight, however, is not always indicative of equal improvement in the general health, the most improved cases being, more usually, those in which the increase has been moderate and progressive. I have seen cases which have mani-

[1] *Medical Times*, June 27, 1857.

festly improved under the oil, but in which there was not the least increase of weight. I have also seen many in which, notwithstanding a regular increase in weight, the physical signs of the disease went through their several stages unchecked.

Other *animal and vegetable oils* have the same general effect as that of the cod-liver, but in a much less marked degree. I have tried the common train oil, the oil of the spermaceti whale, and neat's-foot oil, besides linseed, olive, almond, and cocoa-nut oils. The greatest effect was noticed in the experiments upon the train oil, and the least in those upon the vegetable oils, the latter adding little or nothing to the weight, and appearing to do little good, except in occasionally relieving the cough. I believe that no other fish oil can compare with that of the cod-liver, and that however much other oily substances may effect in phthisis, they all lack that peculiar principle—whatever it be—which renders the cod-liver oil so valuable. Although it cannot be said that cod-liver oil is a really curative agent, I am sure that it greatly prolongs the life and lessens the troubles of the consumptive invalid.

In reviewing the preceding observations, it has occurred to me, as doubtless it will occur to others, that I have shown not how *much* can be done, but rather how *little* can be done, for phthisis by physic alone.

In the treatment of all chronic diseases, but particularly in consumption, *mental and hygienic tonics* are quite as important as material ones, or perhaps more so. Change of air and scene, new habits and associations, fresh circumstances of life, renewed hopes and anticipations, are, indeed, great agents in our hands. That medical tonics in their various forms, judiciously applied according to special circumstances, are powerful and useful adjuncts, I am quite convinced ; but the belief that any of them ever has had, or ever will have, a *specific* effect upon the disease, so as to "stamp it out," neither experience nor reasoning permits me to entertain.

ON THE PRACTICE OF COUNTER-IRRITATION.

BY W. H. DICKINSON, M.D. CANTAB. F.R.C.P.

Physician to the Children's Hospital, Assistant Physician to St. George's Hospital.

THE art and the science of medicine appear in the present day to have contracted an alliance which cannot fail to lead to important changes in practice. For long centuries the art of healing, to give it a better name than it generally deserved, was exercised in almost total ignorance of the laws which regulate the processes of human growth, sustenance, and decay. But now the blind and tentative wanderings of therapeutics have obtained a certain amount of direction from physiology and pathology, which have crept up slowly in the rear. The association of the healing art and its directing science reminds us of the old fable of the blind man with the lame man upon his back. The remedial art, full of activity and vain confidence, walks on apace until, warned by repeated disasters, it is driven to accept a burdensome but intelligent guidance. Lame science and blind practice now travel in company, but not without occasional disputes.

I ventured to ask thoughtful physicians to reconsider the old system to which the name of counter-irritation is commonly applied. By this I mean the practice of applying irritants to the skin which overlies, but is not necessarily connected with, an inflamed or diseased structure. I have no wish to deny that deep-seated disease may sometimes be influenced by external applications, but I question whether we have evidence to warrant the belief which our practice implies, that, by establishing on the surface a change of an irritative or inflammatory kind, we direct an influence antagonistic to changes of the same sort in organs which lie in a substratum vertically below, though without anatomical connexion.

The custom of placing blisters, iodine, croton oil, or other irritants to the chest in diseases of the lungs, to the belly in diseases of the stomach or bowels, to the back in diseases of the spinal cord or kidneys, are examples of the practice to which I refer.[1] It is easy to show that there is no direct communication in these cases, by nerves or blood-vessels, between the skin and the organs which it is desired to influence; and it is not easy, or, perhaps I may venture to say, it is not possible, to show how the deep inflammation can be advantageously influenced by such proceedings.

Dr. Risdon Bennett has said[2] as much as an enlightened physician can say in favour of counter-irritation, and I feel myself in a very unsatisfactory position in even partially differing in opinion from any one who can bring such wide observation and extensive knowledge to the discussion of a practical question. Dr. Bennett defines counter-irritation as the application of measures which, by their irritant action, attract blood to one part of the body, and so influence morbid action in another. This definition, however, does more than justice to the common practice, since it includes nothing but what may be beneficial. It embraces some therapeutical proceedings of undoubted value, but says nothing about the tradition which makes the virtue of counter-irritation depend upon superposition, regardless of structural connexion, and can scarcely be held to comprise the common use of blisters and other irritants. I think the idea at the bottom of counter-irritation is that of superseding one morbid action by another, rather than that of moving blood from place to place. We can scarcely suppose that the small amount of blood which collects or moves in consequence of the application of blister, or even of a moxa, or hot iron, can be much missed elsewere. It may be well to separate irritants from derivatives, to distinguish applications which irritate or excoriate the skin, without effecting any decided transposition of blood, from those which act upon the blood-vessels in a manner especially designed to attract, imprison, or discharge their contents.

There is no doubt that blood-letting, if considerable, from

[1] St. George's Hospital Reports, vol. iii.
[2] See *The Practitioner*, June, 1869.

whatever vessel the blood be drawn, may influence the system at large, and may tell upon any or upon all organs. If the blood be only temporarily withdrawn, similar effects may be temporarily produced. The plan introduced some years ago of enclosing a limb in an exhausted chamber, has been known to produce constitutional results. The centrifugal bed of Darwin, by causing the blood to leave one part of the body and collect in another, could replace, to instance the effect upon the brain, the symptoms of congestion by those of anæmia changing a state of excitement to one of syncope.

In the same manner, but to a much smaller degree, there can be no doubt that mustard poultices, causing injection of an extensive surface, may cause changes of an opposite nature elsewhere. Of this process Dr. Bennett has given some instances. Whence the blood will be derived which fills the boot, or reddens the skin under the mustard plaster, will necessarily depend upon the course of the vessels which supply the injected capillaries. A mustard poultice upon the chest will draw blood from the vessels of the thoracic wall, and through them from the aorta or vena cava. The rubefacient will not make any demands upon the circulation within the lungs, except through these great vessels. And considering how small a proportion of the contents of the aorta or vena cava can be withdrawn by such means, we may infer that the loss in the branches secondarily affected must be infinitesimally small, and will occur not especially in the lung, but equally elsewhere. We can reach the lung and bronchial tubes only through the general circulation, and the same may be said of many other deep organs, such as the heart, stomach, bowels and spinal cord, which have no community of circulation with the tissues which surround them. Where there is no continuity of vessels, deviation or deletion, to be effective, must be such as to effect the whole system. The results of depletion can be localized only so far as blood-vessels are continuous. If two sets of capillaries, or two networks of small vessels, are in intimate connection, it is evident that we may relieve one by withdrawing blood from the other. It is probably on this principle that we must explain the decided advantage that sometimes results in cases of croup from leeching the outside of the larynx. And we may believe that

under certain circumstances of pericarditis, or pleurisy, we can relieve the affected membrane by depleting the wall of the chest, which has a vascular connexion, though not of a very intimate kind, with its outer layer.

But Dr. Bennett goes much further than this, and, appealing to clinical observation with all the weight which attaches to his large experience, instances conditions of deep pulmonary disturbance which have subsided after the application of derivative measures to the chest wall. It seems ungracious to question evidence of the kind he has brought forward, resting not only on general credence, but also upon his own observations. The argument from experience, however, in the cure of disease, is often peculiarly liable to error. Some of the affections adduced as yielding to external applications, the paroxysmal dyspnœa of phthisis and cardiac asthma, are of short or uncertain duration, and perhaps may yield as much to time as to mustard. Hepatitis, intestinal inflammation, congestion of the ovaries, and ulceration of the stomach, all adduced as yielding to the application of blisters to the superjacent integument, are disorders not so certain of diagnosis, nor so constant in their progress, as to afford a sure basis for a therapeutical deduction. It must require a great accumulation of evidence to overcome the manifest improbability of these diseases being influenced by a remedy which neither involves the whole system in its results, nor appeals in any intelligible manner directly to themselves. The onus of proof rests with the advocates of counter-irritation, and it may fairly be submitted that we have no clinical evidence sufficient to assure us that a blister on the chest directs any especial therapeutic influence to the lung, or upon the epigastrium to the stomach. All our knowledge of vascular and nervous connexions is opposed to such a conclusion.

From the fact that a mustard plaster causes desquamation of the cuticle where it is applied, or in other words that the mustard arrests or alters the nutrition of the epithelial cells with which it comes in contact, I cannot agree in inferring that it works changes in distant and unconnected tissues.

From the frequent occurrence of bronchitis or pulmonary inflammation after the exposure of the chest to cold, Dr. Bennett

infers a peculiar correlation between the circulation within the lung and that in the skin covering the outside of the chest. But it is necessary from such facts to draw such a conclusion? Are we warranted in supposing that when inflammation within the chest comes on from cold, that the effect is due to an occult sympathy or unexplained relationship between the lungs and a particular area of skin? Possibly in some cases the external cold may be such as to penetrate the walls and act directly upon the organs beneath. Perhaps more often the morbid result is due to the inhalation of cold air, or to a general arrest of cutaneous secretion.

Dr. Bennett has collected many examples of metastasis, as it is termed, and reminds us that in gout, eczema, and the exanthemata, internal and external affections replace one another; and that with regard to gout in particular, and also, he thinks, in some other conditions, the disturbance may, by external irritation, be attracted to the foot, and so induced to leave an internal organ. This principle, however, so far as our present knowledge goes, is limited to those disorders which are produced by a moveable poison, and does not apply to the numerous inflammatory conditions, continually made the subjects of counter-irritation, which depend upon fixed morbid deposits or mechanical mischief; such, for example, as meningitis, the result of tubercle, or pneumonia depending upon imperfection of the mitral valve. Where there is no virus there can be no metastasis.

Allowing the principal of translation to the utmost extent, we find no reason for associating each organ in a morbid partnership with the nearest cutaneous surface. Gout may fly from the stomach to the toe, rheumatism from the knee to the heart; measles may associate the lung with the whole surface of skin; eczema may travel from the scalp to the bronchial tubes; but we find nothing analogous to the practice of the physician who blisters the chest for pneumonia, or the epigastrum for ulcer of the stomach.

There is no question that, under certain circumstances, some of which Dr. Bennett has referred to, diseases can be influenced through the skin. We are all familiar with the important pathological results of cutaneous injuries. It is known that febrile disturbances may result from superficial irritants medi-

cinally applied, and it is possible that there may be states of health in which such a stimulus may be desirable. We may believe that mustard, dry or wet cupping, and other modes of derivation may be useful when adopted in their application to the structure of the body and the nature of disease. There can be no doubt that serous accumulations may, under appropriate circumstances, be removed by vesication; and it is probable that, as Dr. Anstie[1] thinks, blisters may sometimes be useful in neuralgia, acting upon the extremity of an affected nerve. But let us cease to blister the chest for pneumonia, or to address remedies to the loins which are intended for the kidneys. Let us throw aside all expedients which have no better foundation than the vague ancestral notion that all inflammatory disease depends upon a moveable essence, and that the human body, like a sponge, is equally permeable in all directions.

[1] See Paper by Dr. Anstie, *Lancet*, Feb. 26, 1869.

ON THE MEDICINAL TREATMENT OF ULCERS OF THE LEGS.

BY CHRISTOPHER HEATH, F.R.C.S.

Assistant Surgeon to University College Hospital, and Teacher of Operative Surgery in University College, London.

In the *Lancet* of January 11th, 1868, I gave a brief summary of the methods of treatment I pursue for ulcers of the legs, under the head of "Hospital Out-patient Practice." I wish now to insist briefly upon a few points in connexion with the medicinal treatment of these affections, which in my opinion deserve especial notice. I find numerous authorities upon the subject, laying great stress upon the local treatment of the various forms of ulcers by bandaging, by ointments of several kinds, or by lotions; but I do not find that prominence given to internal remedies which a considerable experience in this class of disorders has led me to claim for them. The three drugs which I constantly employ as adjuvants to the local treatment of ulcers of the leg are opium, iodide of potassium and arsenic; and each has its appropriate class of cases. Mr. Skey has on more than one occasion directed the attention of the profession to the advantage of employing the first of these—opium—in the treatment of ulcers, and lays special stress upon the value of the drug in cases of chronic callous ulcer. I find opium of the greatest service, however, in the small irritable ulcer often found in combination with varicose veins, and also especially in any form of ulcer in which a sloughing action has supervened. I have had recently a case of tertiary ulcer in the leg making satisfactory progress, when it was suddenly attacked with violent sloughing action. This rapidly yielded, however, to the free administration of opium, combined with local poulticing.

In iodide of potassium we have, I believe, a remedy most potent—I might almost say infallible—in all cases of ulcer dependent upon syphilitic taint, if given in appropriate doses. The tertiary syphilitic ulcer is in my experience a very common one, and may be recognized by the peculiar "cachectic" appearance of the sore, the worm-eaten margins, the thin, profuse discharge, and the want of all healthy granulation at the base of the ulcer. These ulcers affect especially the upper part of the leg, are not usually combined with varicose veins, occur in comparatively young subjects, and frequently recur again and again, as is shown by the thin cicatrices seen in their neighborhood. The majority of these ulcers occur in women, and are traceable in most cases to infection from the husband, either directly or, more often, indirectly through the *fœtus in utero*. In these cases there has often been no genital ulceration, no coppery eruption on the skin; but the patient gets out of health, has ulcers on the extremities, and very generally aborts if she becomes pregnant. A very small dose of the syphilitic poison is sufficient to produce these ulcers, and I believe, though the point is one difficult to be sure about, that congenital syphilis may show itself in this way in comparatively early life, *i.e.* between puberty and twenty. At least I have had more than one patient under my care with ulcers of the leg which rapidly healed undert anti-syphilitic treatment, who strongly denied any personal infection.

In order to derive marked and immediate benefit from the iodide of potassium in these cases, the ordinary 3 and 5-grain doses are useless, and it is essential to begin with 10-grain doses thrice daily in combination with an alkali, and to push it if necessary to 15, 20, or even 30-grain doses, though these latter are seldom necessary. Local mercurial treatment, in the form of yellow or black wash, or the white precipitate ointment appears to hasten the healing of these ulcers; and their recurrence is, I have no doubt, due to non-persistence in the internal treatment until the patient's health is thoroughly restored.

Arsenic is an invaluable remedy in those common cases in which chronic eczema is a concomitant, if not the antecedent, of the ulcer of the leg. In those cases where the skin is

irritable and inflamed, and the epidermis dry and scaly, local treatment may be varied without end and a cure will not be produced; whereas, if arsenic be given internally, the leg will rapidly improve and the ulcer heal under any simple stimulant. My experience does not corroborate the rule laid down by Mr. Hunt, of limiting the dose of the liquor arsenicalis to five minims thrice daily. After a careful and extended trial of the medicine administered in this way, I have come to the conclusion that in many cases to produce a cure it is necessary to increase the dose to ten or fifteen minims, and to maintain this high rate until the constitutional symptoms of the drug are produced. The same rule holds in the treatment of ulcers, lupoid or otherwise, on other parts of the body, but I will confine my remarks at present to ulcers of the lower extremity. I am careful always to administer arsenic upon a full stomach, and I find a remarkable tonic effect produced by its exhibition.

I have before me the notes of the case of a woman, aged 56, who came to me in March, 1868, with chronic eczema of the leg, and with an ulcer, the edges of which were so hard, that I almost doubted whether there was not some scirrhous infiltration. In April she began taking liq. arsenicalis in five-minim doses thrice daily. This was increased at the end of a month to eight-minim doses, and the leg began to improve rapidly. On June 3d, the dose was increased to ten minims thrice daily, and she took this dose steadily for eight months, the leg getting smooth and healthy, and the ulcer slowly healing. In January, 1869, the constitutional effects of arsenic began for the first time to show themselves, and the dose was immediately reduced to five minims, and this she is now taking, the leg being well, and the ulcer at the end of a year being nearly healed and quite soft at the edges.

Another patient, a broken-down woman, aged 60, with bad eczema of the leg and ulcers above the inner ankle, began taking liq. arsenicalis in five-minim doses thrice daily, on January 10th of this year. The dose was increased to eight minims on February 20th, and the skin around the ulcer being healthy, and the ulcer healing, quinine was substituted on May 1st. On July 3d, however, it was manifest that the ulcer

was not making progress, and that the skin was becoming scaly and red, and she therefore resumed the arsenic.

I have quoted these cases principally to show that feeble and elderly patients bear and do well under considerable doses of arsenic. I am convinced that the fear of producing toxic effects deters many practitioners from pushing this drug sufficiently far to produce the desired result. I have seen several instances of ulceration in various parts of the body where arsenic has been administered for a length of time without inducing healing, but in which a rapid cure resulted from pushing the dose as above recommended.

Reviews.

Das Chinin als Antiphlogisticum. Inaugural-Dissertation der Med. Facultät zu Giessen. Von Adolph Martin. Giessen: W. Keller, 1868.

(*Quinine as an Antiphlogistic.* By Adolph Martin.)

This pamphlet—which had accidentally escaped our notice—within small compass presents matters of much importance. The author has made researches upon the action of quinine upon animals, which confirm, and in some respects extend, the conclusions of Professor Binz, as to the power of quinine directly to arrest the inflammatory process by checking the migration of the blood-corpuscles. As the opinions of Binz have lately been criticised with a good deal of freedom, as if they were the unsupported dicta of one observer, it is of consequence that the independent corroborative evidence here brought forward should be widely known.

While Binz and Scharrenbroich had produced a very large amount of evidence apparently proving that quinine, and a number of other remedies, have a specific influence in checking the vital amœboid movements of the white corpuscles, it was left an open question by the former (*Ueber das Wesen der Chininwirkung*, Berlin, 1868),[1] whether or not this influence extended to actual prevention of the passage of the corpuscles through the vascular walls in inflammatory conditions. Dr. Martin addressed himself to the consideration of this further question. His experiments on frogs were conducted on the model of Cohnheim's famous researches; the animals being paralysed with curara, the mesentery was drawn through a wound in the abdominal wall and spread out upon perforated slices of cork for microscopic examination. In preliminary series of studies the author thoroughly familiarized himself with the phenomena, first described by Cohnheim, which occur when the inflammatory process is allowed to develop itself unchecked. He then began comparative experimentation: two frogs of equal size being simultaneously paralysed with curara, in one the inflammatory process was allowed to run an uncomplicated course, in the other quinine was injected subcutaneously; every stage of the

[1] See *Practitioner*, August 1868.

subsequent changes was in each case sedulously watched. This double experiment was repeated with several pairs of frogs; and, besides this, the effect of directly painting the mesentery with a solution of quinine was tried in several instances. The results were very decided. In the animals not treated with quinine the characteristic dense agglomeration of white corpuscles along the walls of the vessels was strongly marked, and the migration processes went on freely; simultaneously there was notable dilitation of the vessels and slackening of the stream. In the frogs treated with quinine, all these phenomena were invariably much more feebly developed, sometimes they were only present in trifling degree. In the sixth experiment, the direct application of quinine to an already inflamed mesentery, in which extensive migrations had already taken place, produced evident and notable changes in the white corpuscles; these did not cease to migrate, but became dark, granular, and indented, and lost their vital movements as soon as they had passed outside the vessels.

Besides these experiments, Martin made some observations on dogs, in order to test the assertion of Binz and Scharrenbroich as to the effect of quinine in diminishing the number of white corpuscles. As with the frogs, two animals of equal size were simultaneously and comparatively experimented upon. The result of this research was very remarkable, the difference between the number of white cells being far too great and too constant to have been the result of accident; and, moreover, it was evident that, as the action of a single dose of quinine passed away, the white cells began to multiply again with great rapidity.

The final series of experiments made by Martin were directed to the novel object of testing the cause of events in parenchymatous organs; and, after expending much trouble, he succeeded in following the cause both of the simple and the modified inflammatory process in the liver of the frog. Here, again, the effect of the quinine was unmistakeable.

The general results of the whole inquiry conducted Martin to the following conclusions:—1. Quinine limits the pathological migration of the blood-corpuscles into the tissues of the membranous and parenchymatous organs exposed to the air, both when it is given subcutaneously and when it is directly applied to the part. 2. It produces this effect, (*a*) by impairing the vital properties of the existing white corpuscles, (*b*) by hindering the generation of new white corpuscles, and (*c*) by restraining the dilatation of the vessels. 3. Quinine acts as an antiphlogistic, by reducing all the visible factors of suppurative inflammation. 4. The use and the efficacy of quinine in other pathological conditions distinguished by multiplication of white

cells, *e.g.* typhus, leukæmia, &c., is based upon and explained by its relations to the life and the formation of these corpuscles.

We strongly recommend our readers to study this pamphlet of Dr. Martin's, which certainly conveys to our minds the impression of thorough and patient scientific research leading to sound conclusions. It is difficult to exaggerate the importance of the therapeutic ideas which have been put forward with so much energy and ability by Professor Binz; and although experience forbids us to hope that quinine or any other drug can prove a universal specific for the inflammatory process, it will be a great gain if further observation shall confirm the accuracy of researches which throw such a flood of light upon the way in which one kind of inflammation, at least, can be scientifically arrested. It is impossible not to feel more hopeful for the future of scientific therapeutics when we read the results of such labours as those of M. Martin.

Lehrbuch der Hautkrankheiten. Von Dr. Isidor Neumann. Wien: Braumüller, 1869. 8vo. Price $7.50.

(*Manual of Skin Diseases.* By Dr. Isidor Neumann.)

Traités de Affections de la Peau. Par le Dr. E. Baudot, d'après les doctrines de M. Bazin. Paris: F. Savy, 1869. 8vo. Price $3.00.

(*A Treatise on Skin Affections.* By Dr. E. Baudot, following the doctrines of M. Bazin.)

A Good opportunity is afforded, by the almost simultaneous appearance of the two works above mentioned, for a study of the recent dermatology of Germany and of France. Upon the pathalogical contents of these volumes we shall of course say little, our main object being to examine their therapeutic teaching; a few words are, however, advisable.

We hope we may be forgiven for saying, that of all the hopeless subjects—of all the distracting studies—with which we are acquainted, that of skin disease classification is the most bewildering and enraging to the ordinary physician. It is all the more irritating because there seems a general agreement of opinion among those who have the largest practical knowledge, that all this elaborate word-apparatus is perfectly unnecessary, and that in fact as much practical good in treatment can be done by those who ignore it as by those who cherish and magnify it. But if we must choose between the elaborateness of the French and that of the German dermatologists, we cannot hesitate to accept the latter as by far the most preferable. There is at least a solid basis of observed fact for the greater part of Hebra's

classification, which Dr. Neumann (his former pupil) adopts. But the doctrines of M. Bazin (here put forward by a distinguished pupil, M. Boudot) lead him to a classification which is not merely elaborate, but is based on hypotheses which have always appeared to us utterly unwarranted, and calculated indefinitely to retard the progress of scientific skin-pathology. We cannot admit that there is any scientific proof of the theory that the diseases grouped by Bazin as "Arthritides" are really all under the domination of an arthritic diathesis, or that those associated by him under the name "Herpetides" are the common offspring of a constitutional "Herpetis." The idea of this classification appears to us to be distinctly ontological; and although in the case of physicians so experienced as MM. Bazin and Baudot it may not interfere with the attainment of a good practical command of the resources applicable for treatment, there can be little doubt in our mind that its misleading effect upon inferior practitioners must conduce to a very bad style of practice; for it is always the lower order of so-called "practical" men who make the very worst use of traditions which are based on metaphysical dogma.

It is agreeable to turn from the theoretical side of the subject to the practical remedies which are laid before us in these two works. The general remarks on treatment by Neumann (p. 36) are particularly gratifying. He gets rid at one sweep of the whole series of internal remedies which used to encumber the dermatologist's Materia Medica, and recognizes only arsenic, mercury, quinine, iron, cod-liver oil, iodide of potassium, and carbolic acid, as of real use. Nor is his list of external remedies very long. Besides the various kinds of baths and other applications of water, he mentions sulphur, the preparations of tar, and its distillative products (carbolic acid, &c.), the various soaps, and the series of caustics (arg. nitras, caustic potash, corrosive sublimate, the strong mineral acids, and chromic acid; the Vienna paste; the arsenic paste; Landolfi's paste of the chlorides of bromine, zinc, and antimony; chloride of iron, Plenk's paste of camphor, corrosive sublimate, alum, &c.; chloride of zinc, alum, calomel.) It is a great thing to hear the inheritor of Hebra's vast experience say, with so much confidence and clearness, that we may do great things with so moderate an armamentarium.

On the other hand, the therapeutics of M. Baudot, though seriously marred, as we think, by the theoretical basis on which Bazin's diathetic doctrines rest, are on some points much fuller than those of Neumann, and include some matters which are conspicuously wanting in the German treatise. Especially is this the case with regard to the subject of the action of mineral waters in skin diseases, as to which Neumann's treatise must

certainly, we think, be pronounced defective, while Baudot's is careful and good.

Certainly, every English student of medicine, and not merely every professed dermatologist, would do well to read these two works, as they could hardly elsewhere obtain, in so small a compass, an accurate account of two of the most dermatological systems existing.

Theory of the Treatment of Disease adopted at Ben Rhydding. By William Macleod, M.D., F.R.C.P. Edinburgh, Senior Physician to Ben Rhydding.

We owe an apology to Dr. Macleod for a quite unintentional slight. In a notice of Dr. Küchenmeister's work on the cold water treatment of disease, we reproached the English medical profession with leaving hydrotherapy in the hands of uneducated persons. We, of course, had no idea of including Dr. Macleod in that description; and as he has recalled himself to our memory by forwarding his work on the treatment adopted at Ben Rhydding, the present is a favourable opportunity for an examination of what has been done by Dr. Macleod in the twenty years during which, as he tells us, he has laboured to establish hydropathy on a scientific basis in this country.

It would doubtless be an injustice were we to criticise too strictly the brief, not to say hasty, character of the sketch which is given in this volume of the author's principles of treatment. It may be allowed that the object of the writer might be legitimate enough, although he made no attempt to produce a complete treatise on general therapeutics, or even on hydrotherapy. He might well allege that his only desire was to give the medical profession a general idea of the style of his practice, and the degree in which it corresponds with or differs from the treatment in ordinary use. We have considered this, and have read Dr. Macleod's book, making all necessary allowance, but we are sorry to say that the result of our study of this little work is not particularly flattering to the author.

We may admit that there are one or two subjects treated of in the book which possess a real interest to the profession; for instance, the effects of the compressed air treatment. Ben Rhydding is almost, if not quite, the only place in this country where this method can be seen in action, and Dr. Macleod's account of its effects, though somewhat hazily expressed, appears to afford a rather interesting confirmation of some of the facts observed at Reichenhall and elsewhere by much more competent persons than Dr. Macleod. Another matter which also interested us is the account of the use of dydropathic measures in cases of exophthalmic goitre, and we are not surprised to hear that they

were decidedly successful. But the rest of the book is rubbish. There is a wonderful statement about the diseased action having, as a rule, its commencement in irritation of the vaso-motor nerves ramifying on the capillary blood-vessels, &c. But the climax is reached at pages 32-4, where the author describes a hitherto altogether unknown group of diseases, the effects of close intermarrying. The reader will learn with astonishment that when cousins intermarry for four or five generations, the offspring at last begotton are liable to—we were going to say, spontaneous combustion—but really it seems to be a good deal like it. The poverty of vital force in these wretched beings is so great—"the chemical elements of the body appear to be so loosely held together, that the least derangement instantly causes a more rapid waste of tissue, the formation of new chemical compounds, and a great development of heat; a state of fever is thus frequently produced, often assuming a typhoid character and terminating in death, *after which putrefaction goes on with amazing rapidity*. [The italics are ours.] This condition of the chemical elements of the body may be illustrated by the loose chemical combination of one of the atoms of oxygen in hydric peroxide, when even a slight increase of heat, or the mere presence of charcoal, or finely divided platinum, causes at once its separation from the hydric compound." ! ! ! It gives a serious shock to our sensibilities to reflect that our aristocracy, who are so particularly given to repeated intermarriages, must by this be almost universally in a state of loose combination, and ready to putrefy with amazing rapidity on the slightest provocation. However, the profession and the upper classes will be glad to learn that a good long stay at Ben Rhydding eradicates the putrefaction tendency; at least this was the result in three cases of this peculiar state of the organism which Dr. Macleod has had under treatment.

After this choice bit of nonsense, it is rather a relief to find that Dr. Macleod is a homœpathist; at least at page 80 we are favoured with the dictum that mercury is a specific in syphilis, for it will in large doses produce symptoms resembling that disease. On the whole we do not see that Dr. Macleod has improved his position by claiming special notice and a special exemption from our disparaging comments on the manner in which hydropathy is applied in the generality of English establishments for the water-cure. We don't for a moment question that patients often receive benefit at Ben Rydding. But we do say that the work in which Dr. Macleod explains his theories of disease and his principles of treatment is not particularly creditable to an educated member of the profession.

The Practice of Medicine. By THOMAS HAWKES TANNER, M.D., F.L.S., &c. &c. In 2 vols. Sixth Edition. London: Renshaw, 1869.

DR. TANNER'S well-known compendium of medicine here appears in a sixth and very considerably enlarged edition. It now fills *two* very handsome volumes. It is superfluous to say that a work on general medicine which has obtained so large a success must have filled a great want felt by the numerous practitioners who are scattered over the country. And it is highly creditable to the author that while immersed in busy professional work he has found time, within the last two years, to make so many and such valuable additions to his book. We have only had time to turn over the pages rather hastily, but we notice, *e.g.*, a moderate and just appreciation of the limits within which the sphygmograph is really useful as an instrument of diagnosis and prognosis, an accurate representation of the recent doctrines about phthisis, a good account of cerebro-spinal fever, of the more recent researches as to the action of alcohol, &c. Under the head "Inflammation," however, we think the author should certainly have introduced an account of the important discovery by Cohnheim of the migration of the blood-corpuscles.

As before, the value of the work is much augmented by a copious appendix, containing prescriptions, notes on mineral water, &c.

Ueber die Anwendung der Einreibung des Unguentum Stibio-Kali tartarici in die Scheitel-gegend in bestimmten Psychosen. Inaugural-Dissertation von OTTO WILHELM MADELUNG, aus Gotha. Bonn: 1869.

(*On the Application of Inunction in the Tartar Emetic to the Treatment of some Mental Diseases.* By O. W. MADELUNG.)

THIS treatise appears to suggest matters of real practical importance to those who are concerned with the treatment of insanity. No doubt the practice of tartar emetic inunction, carried out in the manner indicated in this essay, is at first sight a measure of great severity, and such as English alienist physicians are accustomed instinctively to dislike. But we must say that the facts contained in this pamphlet seem to speak for themselves with considerable weight; and we have, moreover, received the personal testimony of one of the physicians to the asylum at Siegburg, where the experiments were carried out, to the undoubted value, as he thinks it, of this method of treatment. He informs us, however, that it requires much practical tact, both to select the right cases, and also to enforce and carry out regularly the treatment, which is of course very disagreeable,

as it causes painful inflammation of the scalp, &c. We must say that all our predjudices are against the treatment, but that the facts narrated induce us to suspend our judgment.

Diseases and Injuries of the Eye; their Medical and Surgical Treatment. By GEORGE LAWSON, F.R.C.S., Surgeon to the Royal London Ophthalmic Hospital, Moorfields, and Assistant-Surgeon to the Middlesex Hospital. London: Renshaw, 1869. Price $3.75.

THIS handy and beautifully printed little volume is as good in the quality of its contents as it is attractive to the eye. Mr. Lawson has long been known as an ophthalmic surgeon; he has enjoyed a large experience, and he has the faculty of telling his story clearly. He has here given us a manual of almost pocket size, in which the practitioner will find short and clear descriptions and directions for the treatment of every kind of eye disease.

The matters which strike us as the most notable are the following:—In a very careful chapter on "Iritis" (in which, however, we regret that no notice is taken of the interesting question of neuralgic influences), the author makes some sensible remarks and suggestions on classification. We observe that he is unhesitating in his adhesion to mercury for the syphilitic form. In a brief chapter on "Glaucoma," a good description of the disease and its treatment by iridectomy is given; we are glad to see that the author has expressed himself with decision and energy as to the high practical value of that treatment, and as to the ignorance and prejudice which alone resist its universal recognition. Under the head of "Cataract," we have been struck with the great importance of the protest which Mr. Lawson makes against the simultaneous performance of extraction upon both eyes. Our own attention has been repeatedly called to the recklessness with which this double operation is done by eminent ophthalmic surgeons, and to the calamity of total loss of sight which not unfrequently follows it. In a few plain and sensible words our author points out, as we think, the unmistakeable folly of this procedure. The form of operation which Mr. Lawson prefers is a slight modification of Graefe's "modified linear" extraction, which the reader will find at p. 120. The chapter on "Tumours" is well done throughout, and a particularly interesting point is the great practical success which is shown to attend the treatment of *orbital* tumours with chloride of zinc. In a chapter on "Amaurosis and Amblyopia," the author has taken the trouble to unravel carefully a singular tissue of confusions and blunders by which these very different disorders have been mixed up with others—a mistake which has crept even into the excellent modern works of Liebreich and Soelberg Wells,

Another novelty, and as it seems to us an important one, is the way in which Mr. Lawson deals with the subject of paralysis of ocular muscles; he shows that single muscles, and small groups of muscles, may be *picked out*, by the paralysing influence of a distal irritation, just as infantile reflex paralysis (from dentition, &c.) unquestionably will select particular leg-muscles in the most seemingly capricious way. The chapter on "Injuries" is of course excellent, being an abstract of the able monograph which Mr. Lawson has already published on this subject. It only remains to notice two other novelties, "Distension of the Frontal Sinus," and "Proptosis from inflammatory exudation" (which, so far as we know, have not been mentioned by other authors), and to draw attention to the very useful formulary with which this capital handy-book concludes. The work is sure to become very popular, and to enjoy a large circulation.

Cases of Syphilis treated without Mercury. By CHARLES R. DRYSDALE, M.D., and ROBERT WILLIAM DUNN, Esq., M.R.C.S. London: H. Baillière, 1869.

THIS pamphlet is just the kind of essay with which we find it, as reviewers, most difficult to deal. Its authors are able and respected practitioners, and in so far as they are innovators, taking an independent course unfettered by tradition, they command our strong sympathy. In the case of mercury, moreover, we have been so often disgusted and horrified with the hideous results of unnecessary and excessive dosing, that we are strongly biassed towards a non-drugging system. Here is a pamphlet which records the history of a long series of cases—eighty-five in number—of various kinds of syphilitic affections which had been treated without mercury by the authors, and according to them, with excellent success. What shall we say? We cannot for a moment dispute the accuracy of the reports here published, though we must say that the brevity of many of them scarcely allows a fair opportunity for appreciating the exact nature of particular cases. We are willing to allow that there is still something to be said on the side of the absolute non-mercurialists, and we are personally firm believers in the impropriety of ever inducing the decidedly *toxic* action of mercury. But a very large and long-continued out-patient hospital practice has shown us absolutely nothing which could for a moment shake our belief in the immense superiority of mercury (used in moderation) to every other drug in several varieties of syphilis, more particularly the viseral and the infantile forms, and certain skin eruptions. We are open to conviction, but it will take very much more than Messrs. Drysdale and Dunn's present pamphlet to convince us that mercury is of no use in syphilis.

Ueber die Chloressigsüare als Aetzmittel. Inaugural-Dissertation von Friedrich Albert Urner. Bonn; 1868.

(*On Chloracetic Acid as a Canutic.* By F. A. Urner. Pamphlet.)

This treatise gives an account of researches destined to utilize for medical purposes a substance hitherto only of interest to the chemist. The caustic properties of the monochloracetic and the dichloracetic acids have long been practically and unpleasantly known to observers who have dealt with them as objects of chemical experiment, and the author of the treatise before us once handled some chemically pure crystals of the former, whereupon he at first experienced a soapy feeling of the skin, and afterwards a burning sensation, which was succeeded by vesication, and even suppuration at the parts most strongly affected. The dichloracetic acid is much more rapid in its action, and in practice Urner found a mixture of the two to be the most convenient; the proportions of the respective ingredients being varied according to the energy of cauterization which was required. The author experimented first on the action of the acid on dead animal skin—thin kid leather; trying the effects of various caustics comparatively with that of the new agent. The chloracetic acids resembled nitric acid in producing a distinctly *corrosive* effect; but different from it in the strict *localisation* of the corrosion, that of nitric acid spreading irregularly. Similar results were obtained by experimentation on sole-leather. The action of nitric and of dichloracetic acid upon albumen coagulated by heat was then comparatively examined; after two or three days' contact it was found that the nitric acid had penetrated much the furthest into the albuminous mass—a circumstance, however, which is due to the *diffusive* power of this acid; for when the experiment was repeated on *hard-boiled* white of egg, it was found that the true corrosive power of the dichloracetic acid was much the greater. Comparative trials of the nitric acid and of the mono- and di-chloracetic acids upon the shaven skin of a rabbit; the general result here was that similar physical differences—as to rapidity of action and diffusion—were observed, as in acting upon *dead* skin; and also that while the nitric acid excited *severe* inflammation in neighbouring parts, the dichloracetic acid, while acting equally intensely in a limited spot, confined its action to that spot, merely causing *slight* inflammation around it.

The clinical part of Urner's research was directed first to the action of chloracetic acid upon *warts*, corns, nævi, &c., and here the caustic effects were extremely good. A more serious trial was its application to an extreme case of condylomata on the glans penis, which had already been treated vainly with various strong local agents. Proceeding cautiously at first, Urner came

finally to use pure dichloracetic acid to the whole of the extensive diseased surface, and to loosen the sloughs applied soda solutions. Naturally this gave some pain, but the patient repeatedly declared that it was far more endurable than the suffering which had been previously caused by ligaturing some of the condylomata; and comparative trials of cauterization with nitrate of silver proved that the latter, also, gave more pain than the acid. The final result of the treatment was excellent. The next trial of the acid was on a papilloma of the foot, one and a half inch in diameter, and one and a half inch high—the treatment was quite successful. Urner now applied the caustic to a lupus exulcerans, and at the time of writing had to report that a considerable portion of the diseased skin had become healthy. Finally, he employed the remedy in a case of large syphilitic condylomata of the thighs with perfect and rapid success.

The general result of the experiments and observations seems to be to establish the chloracetic acid as an excellent caustic, very powerful, and at the same time very manageable; and we commend it to the serious attention of English practitioners. A final word or two must be said as to the chemical constitution of the new agent. The weaker, *mono*-chloracetic acid (C_4 H_3 Cl O_4), is acetic acid (C_4 H_4 O_4), of which one atom of hydrogen has been substituted by one atom of chlorine. Dichloracetic acid is the result of a further substitution of one atom of hydrogen by one atom of chlorine (C_4 H_2 Cl_2 O_4). This is according to the old system of notation.

Ueber die Wirkungen des Calabar-Extractes auf Herz u. Rückenmark. Inaugural-Dissertation von Hermann Roeber, aus Berlin. Berlin, 1868.

(*The Action of Extract of Calabar Bean upon the Heart and Spinal Cord.* By H. Roeber. Berlin. Pamphlet.)

This little essay appears a very striking performance, when we remember that it is only a thesis of a candidate for the M.D. of Berlin University; for it is evidently the work of an accomplished physiologist trained by long habits of careful study and of original research. It has, in the first place, the merit of presenting in a concentrated form every fact and opinion of the slightest importance with regard to the action of calabar bean which has been put forward by other observers. And, secondly, it records a long series of the most painstaking and careful researches by the author, in which he tests the correctness of previous theories upon every point concerning the action of the drug. The conclusions at which he arrives, and which confirm in a distinct way the statements of Professor Fraser,

of Edinburgh, are summed up as follow :—1. The chief action of the bean consists in a depression and final annihilation of the excitability of the ganglionic elements of the spinal cord, and its operation especially affects the groups of cells in the anterior horns of the grey matter which conduct impulses from the brain to the periphery, and then attacks also the elements of the grey matter in the posterior horns, which transmit sensations of pain to the brain. 2. By this functional lesion of the grey matter a complete loss of the motor and reflex activity of the spinal cord is produced, likewise a loss of sensibility to pain ; while the sense of touch, and the so-called muscular sense, are retained till the death of the animal. 3. Besides this action on the cord, calabar bean possesses a special power over the movements of the heart, which in small doses it merely retards, but in large doses completely arrests. This action of the poison depends upon a diminution of excitability, and a final paralysis of the excito-motor cardiac nervous centres. 4. The interference with respiration, which is especially produced by small doses, is either the consequence of a sudden affection of the heart's action, or is produced by a destruction of the motor power of the respiratory muscles from paralysis of the spinal cord. 5. The poison increases the secretion of tears and of saliva. 6. The increase of defæcation observed in poisoning with calabar bean is the result of a tetanus of the stomach and of the intestines, the cause of which is not yet fully determined. 7. The motor and sensory nerves are not affected at the commencement or in the development of the affection of the cord ; at a later stage there follows a paralysis, or a hastened death of the intramuscular termini of these nerves. 8. The fibrillary muscular twitchings occurring soon after the administration of the poison, which are especially striking in mammalia, may be explained by a local irritation of them caused by the paralysis of the motor nerve-termini. 9. The "pupils are strongly contracted both in the external and the internal use in large doses of calabar bean extract ; but as to the cause of this, it will be necessary to institute more exact inquiries."

Independently of its other merits, this essay will be found most useful from the exhaustive list of references at its conclusions to the writings of every other observer who has investigated the action of the bean.

Clinic of the Month.

Iodide of Potassium in Aneurism.—Dr. G. Balfour, physician to the Edinburgh Royal Infirmary, continues this subject (vide *Practitioner*, August, 1868,) in a recent paper. In this he details the facts of eleven cases of aneurism treated with the iodide: the success obtained certainly seems encouraging. In all cases where the treatment was carried on for a sufficiently long time, there was not only relief of the symptoms, but a positive improvement; and the author thinks that the facts tend to show that the iodide has a curative and a preventive influence over the aneurismal diathesis. (See *Edinb. Med. Journ.*, July.)

Treatment of Retention of Urine.—Dr. J. W. S. Gourley, Professor of Clinical Surgery in New York University, has invented a new catheter for use in retention arising from stricture, especially where there is a false passage. The catheter nearly corresponds in size with the English No. 3, and is conical, its point being about equal in diameter to No. 1. A groove in the convex side extends about four inches, and is bridged over in its last twelfth of an inch so as to form a canal for the reception of a delicate whalebone guide. The catheter eye is on the concave side of the instrument, about three-fourths of an inch from the point; and is kept closed by a well fitting stillet. The curve of the instrument is equal to one-fifth of the circumference of a circle three and a quarter inches in diameter. The urethra is filled with olive oil by a syringe, and an attempt made to introduce a fine-pointed whalebone guide (about one-quarter the diameter of a No. 1 catheter, and the length of an ordinary bougie), the point of which may be made temporarily spiral by immersion in boiling water, and then twisting round a small staff and suddenly cooling it. If its point becomes engaged in a lacuna, it must be withdrawn a little and then pushed on with a rotary movement. If it enters a false passage, it must be kept *in situ* while another is passed by its side. If this also enters the false passage, the same process must be repeated, and so on till one guide does pass the obstruction and enter the bladder. As soon as this is accomplished, the other guides are withdrawn, the far end of the retained guide passed through the

canal at the end of the catheter, and the latter carried down the urethra along the guide till its point reaches the stricture. Generally, with slight pressure in the right direction, the catheter passes the stricture and enters the bladder. The guide may be kept in position after the withdrawal of the catheter, and dilatation carried on with successively larger catheters, or by splitting with a Holt's or a Thompson's instrument, modified with the canal for the guide; or internal urethrotomy may be practised with any urethrotum (modified with the canal), or the retention catheter may be made available in external urethrotomy, instead of a Syme's staff. (See *Lancet*, June 19.)

Poisoning with Tobacco.—As a pendant to the cases of poisoning from imprudent external application of tobacco-decoction, which we last month quoted from the *Bulletin de Thérapeutique*, we should have mentioned an even more striking case related about the same time by Dr. M. Evans, of Narberth. A little child had ringworm, and an old woman recommended the oil and ash from an old much-used tobacco pipe to be applied. A very small quantity was used, but the effects were rapid and powerful; vomiting, choking, loss of power of limb; then complete unconsciousness, pulselessness, slow breathing, cold surface. The part to which the tobacco had been applied was washed clean, and the little patient was roused, and stimulated with ammonia and coffee. It soon resumed consciousness, and in an hour was out of danger (see *Lancet*, June 19). The large amount of evidence which now exists as to the facility with which the essential matters of tobacco are absorbed by way of the skin draws our attention once more to the subject of the hypodermic use of nicotine in tetanus. There are very many records scattered here and there, which tend to prove that tobacco exerts powerful influence in tetanus; but it is a most dangerous and unmanageable drug in any form except that of subcutaneous injection of nicotine: and we should much like to see this plan extensively tried. It has already produced brilliant results in more than one recorded case.—Ed. Practitioner.

Turpentine in Uterine Hæmorrhage.—Mr. Garraway, of Faversham, relates a case in which turpentine saved a patient who was apparently in a hopeless condition from hæmorrhage two days after labour. One ounce of turpentine diffused in mucilage was injected as high as possible into the rectum; the patient had been previously insensible, with cold and sweating skin, and commencing shrivelling of the surface, but after the turpentine she soon opened her eyes, and swallowing became possible, after which brandy, eggs, &c., were administered with the best effect. (See *British Medical Journal*, July 10.)

Persulphate of Iron Injections for Varicose Veins, &c. The great value of the persulphate of iron on account of its not being caustic (although it is powerfully coagulative), and of the small quantity of it that need be used, is becoming rapidly recognised. Mr. Morgan, of Dublin, reports several successful cases. One was an enlargement of the saphena veins of both limbs in their entire course; a second was an irregular varicose dilatation on the inside of one leg; a third was an erectile tumour of the scalp; and a fourth was an instance of external piles. From three to five drops was the quantity of the tincture injected. (See *Medical Press and Circular*, July 14.)

Signorini's Tourniquet in Popliteal Aneurism.—A patient under Mr. Eager, at the Surrey County Hospital, had popliteal aneurism. Flexion had been tried, and besides giving a good deal of pain had failed to affect the tumour. The leg was now unfastened, and a Signorini's tourniquet was applied to the artery in such a way as just to stop the circulation. In twenty-five days pulsation had entirely ceased, the tumour was much smaller, and quite hard and solid. The cure was virtually complete from this moment, though the patient remained some time longer in hospital. (See *Lancet*, July 10.)

Traumatic Suppuration of Knee-joint treated by Early Incision.—A case of this kind, under the care of Mr. Atchley, at the Bristol General Hospital, is interesting, as showing not merely the value of the surgical treatment in question, but also as demonstrating the good effect of alcohol as an antiphlogistic. The temperature and pulse continued to rise, after the operation, until eight ounces of brandy daily were given, when they began to fall continuously. Recovery took place without any unfavourable symptoms, and the man made a complete recovery. (*Ibid.*)

Simple Puncture of the Knee-joint in Synovitis.—Dr. J. Fayrer, of Calcutta, argues in favour of the performance of this operation, provided that it be performed with great care; and he gives five cases, in all of which it proved successful. The author thinks that the injection of iodine is a serious and probably unnecessary risk. He closes the wound of puncture with lint, saturated in solution of gutta-percha in chloroform. If by chance the wound did not immediately close, it was subsequently dressed with carbolic acid, in the usual way. The author is quite satisfied with the operation even in acute cases, and doubtless in chronic effusions it might be adopted with the most perfect impunity. (See *Indian Medical Gazette*, June 1.)

New System of Abscess Drainage.—Mr. R. Ellis describes a plan by which very effective drainage of an abscess may be

obtained. He uses drainage tubes made of fine hard brass wire, which has been closely coiled round a steel rod. The steel rods may be common knitting needles, of various sizes, and the wire may be coiled on them either by hand or by lathe. If the former plan be adopted, one end of the rod is to be fastened in a vice, and then the wire is very slowly and carefully twisted round. The tubes made in this way are perfectly good, only they are not quite so neat as those made in a lathe. Mr. Ellis was first led, some years since, to the invention of these tubes by the difficulty he experienced in a case where the cavity of the uterus kept filling with fœtid pus, and it was impossible by ordinary methods to keep the cervix patent for the escape of the fluid. In dealing with an ordinary abscess, the wire drainage tubes can readily be introduced through any opening or sinus, either by fitting them on a probe, or without this help, by giving the tube a wriggling, coaxing motion. The following valuable testimonial to the superior efficacy of the wire drainage tubes is given by Mr. Paget, who writes to the inventor :—

DEAR MR. ELLIS,—I have now used your spiral-wire drainage tubes in cases sufficient to prove to me that they have these following advantages over any other means of drainage that I have yet seen :—

They can be placed in sinuses of very small diameter, and with equal advantage whether the sinus have one or more openings.

Their bore is not diminished by bending them to any angle.

They cannot be flattened or shut up by contraction of the orifice of the sinus.

They can be inserted with very great facility ; and can be worn for any length of time, in fit cases, without causing irritation.

They are cleanly, and excite no decomposition in pus or other fluids.

Sincerely yours,
JAMES PAGET.

—(See *Lancet*, July 24.)

Sulphurous Acid as a Remedy for Vomiting.—Dr. Charles Drysdale relates a striking case of dyspepsia (probably gastric catarrh) occurring in a woman, aged thirty-six. For a month before coming under treatment she had suffered from eructations and vomiting of all her meals. For a fortnight she was treated with hydrocyanic acid, with bismuth, and with effervescing draughts ; but no impression was made upon the disease. Dr. Drysdale then prescribed half-drachm doses of sulphurous acid, to be taken three times a day ; the effect produced was very immediate and striking. Within twenty-four hours of taking the first dose of the new medicine the vomiting altogether ceased, nor had it returned at all at the date of the report, three weeks later. (*Ibid.*)

[This case appears to give support to the ideas which are now held by some with regard to the pathology of pyrosis, according to which it is a gastric catarrh attended with, and not improbably kept up by, the presence of low organisms in the stomach fluids.

It is upon this principle that sulphurous acid has been recommended and successfully used by Lawson and others, viz. as a parasiticide; and upon the same principle carbolic acid has been recommended by more than one authority. Certainly, the ordinary treatment of severe pyrosis, with bismuth, hydrocyanic acid, &c., is unsatisfactory in the extreme.—ED. PRACTITIONER.)

Death after Vaccination.—An inquest was held a few days ago upon a child, eleven weeks old, who died of erysipelas after vaccination. This and one or two other cases of the kind which have arisen have given an impetus to popular excitement. The old fabulous stories and foolish notions as to the frequent production of serious or fatal infective disease by vaccination are reproduced with increased vigour and fertility, and we are sorry to say that this time there is more excuse than usual for the prevailing fever. A very able physician, Dr. H. Blanc, is advocating the exclusive use of vaccination direct from the heifer; and his views having been accepted with surprising warmth by one of the medical journals, there is some danger of a most premature and impracticable, and as we think totally unnecessary, clamour for the discontinuance of the present system. We put in this note to announce our entire disapproval of these hasty measures, and our intention, on account of the great practical importance of the question, to deal with it at large in an early number of the *Practitioner*.

Extracts from British and Foreign Journals.

Hypodermic Injection of Morphia in the reduction of Hernia.—Dr. Ravoth reports some remarkable results from the subcutaneous injection of morphia in cases of hernia which had previously resisted the taxis. Quarter grain doses were used. (*Berlin. Klin. Wochensch*, Juni 7.)

Parasiticide Treatment of Diphtheria.—Dr. Ludwig Letzerich is a firm adherent of the doctrine that diphtheria depends on the presence of a parasitical fungus. In order to its cure he holds that we must remove the fungi with the undermined and transformed epithelium or diphtheritic exudate. In the early stages this may generally be best effected by repeatedly scraping off the exudate with a moist rag dipped in alum powder and wrapped round the forefinger; or the rag may be dipped in a warm solution of alum, and then rubbed on the palate, tonsils, and pharynx. Wherever fungi have been, one sees, after they have been rubbed off, red, irregular-shaped spots left behind. The wiping process must be repeated at least three times a day for some time; for there is a continual reproduction of the thallus-threads. Children who are old enough should gargle with warm solution of alum in the intervals.

In the third stage of diphtheria, when there are extensive and obvious deposits on the tonsils, the above plan is not sufficient. We must scrape off the membrane forcibly, with a nail just covered with one layer of rag dipped in strong hot alum-solution. This must be very frequently repeated; and at least once a day the bleeding surface left behind should be touched with a weak solution of nitrate of silver. For the first three to five days the scraping process must be repeated the moment a new deposit appears. The fresh layers become smaller, and it is now sufficient to repeat the scraping twice a day. It is absolutely necessary for success, to enlist the sympathy and intelligence of the patient's friends, so that they may follow up the process with zeal, and prevent the diphtheritic process extending to the larynx. Alum makes the exudate brittle and its fragments more easy of removal; it also acts very astringently on the bleeding surface left after the scraping. For children of a certain age gargling with alum, with chlorate of

potash or with permanganate of potash, is useful in the intervals. No internal remedies are of much use in diphtheria; but astringent preparations of iron, quinine, &c., may be used in circumstances which seem to specially require them. (*Berlin. Klin. Wochensch.* Juni 7.)

Iodine in the Treatment of Malarial Fever.—Professor Willebrand, whose advocacy of iodine in the treatment of typhoid is well known, has recently had the opportunity of trying its effect in cases of intermittent fever. One gramme of iodine and 2 grammes of iodide of potassium were dissolved in 10 grammes of distilled water; 5 drops were to be taken every two hours during the day. The results were very good; both the attacks were speedily cut short. [In fact the success recorded is so uniform as to excite some little doubt, by its mere completeness. However, the paper is very interesting.—Ed. Pract.] (*Archives Gén. de Méd.* Juillet.)

Subcutaneous Injection of Tartar Emetic in the Treatment of Cystic Tumours of the Scalp.—Dr. Kraft-Ebing, of Heidelberg, recommends this plan for the extirpation of the cyst in certain cases. Doubtless, the operative excision is the surest and best for sebaceous tumours, &c.; but in some instances, when the patient is very timid, or the tumour very small, it seems worth while to choose a less formidable procedure. From sundry considerations, Kraft-Ebing was led to inject a few drops of a solution of 10 grains of tartar emetic in half an ounce of water, in a case where the tumour was about the size of a bean. Slight burning pain occurred, but no inflammation. On the third day pressure on the sac caused the whole of the sac to be eliminated, after the issue of a few drops of pus from the injection-wound, which had been previously closed with a little coagalum. There was no suppuration or other change in the cyst; healing occurred by the first intention. Many other similar tumours, from the size of a bean to a pigeon's egg, were successfully treated in the same way. In the case of large cysts, it appeared advantageous to leave a few drops of the solution in the puncture-wound during the withdrawal of the canula. (*Berlin. Klin. Wochensch.* 1869.)

Subcutaneous Injection of Morphia in Infantile Convulsions.—Dr. H. C. Paiol relates two cases of convulsions in young children, in each of which the hypodermic injection of morphiæ sulph. gr. $\frac{1}{12}$ stopped the fits and produced sleep very rapidly. Unfortunately no details of the cases are given; they are said, however, to have been very severe. (*Philadelphia Med. and Surg. Reporter*, June 5.)

Postural Treatment of Prolapsed Funis.—Dr. T. L. Papin had fifteen cases of this affection in his practice at St.

Louis, which were all treated as follows:—Reduction of the funis was effected by placing the woman on her elbows and knees, the chest being depressed as much as possible, and the pelvis elevated, so as to cause the abdominal viscera, with the uterus and its contents, to gravitate as far as possible from the superior outlet. In this position, the bulk of the prolapsed portion being held in the palm of the hand, the fingers and thumb extended embracing the cord, it is by gentle manipulation between the pains gradually passed back within the womb and beyond the promontory of the sacrum, and held in that position till the fœtal head becomes engaged in the superior strait, thus preventing a recurrence of the prolapse. The woman is then gently placed on her left side and delivered in the usual manner. In ten of the cases the children were born alive. Of the remaining five, one died from compression of the cord with the forceps, after the cord had been successfully returned; in another the cord was completely severed with the same intruments; one died from the too free administration of ergot; and the remaining two were cases in which the children were in the transverse position, and no retaining of the cord was possible, death of the children occurring before the uterus could be dilated sufficiently for turning. (*Philadelphia Med. and Surg. Reporter*, June 12.)

Chorea cured by Ether-spray applied to the Spine.—M. Mazade records an interesting case in which severe chorea was effectually treated in the above manner. The patient was a young man aged eighteen; the disease had lasted many months, and after a brief interruption (during an attack of varicella) had returned with increased violence. Fifty grammes (14 drachms) of ether were applied, in spray, along the whole length of the spine with a Richardson's apparatus; the skin was slightly reddened, but not rendered anæsthetic. The next morning the patient announced that he felt much better, although the external symptoms were not very materially changed. The ether douche was administered three times more, and a remarkable improvement was then observed; the treatment was therefore continued, and at the end of about eight days the patient could *write* legibly, whereas the affection of the hands had been so severe as to entirely prevent even hi feeding himself. He was so well as to be about to leave the hospital, about three weeks after the commencement of the ether treatment, when he was attacked with typhoid fever. The latter affection proved slight, and was not followed by any return of the choreic symptoms. (*Lyon Médical*, 4 Juilet.)

A New Dilatator, for Urethral Stricture.—Professor Dittel describes an instrument for forcibly dilating the urethra, which he thinks avoids the principal dangers of forced dilatation.

It is on the principle of the *screw*, but is greatly superior, he maintains to the screw dilatator of Thompson. (*Wein. Med. Jahrb.* Juin 23.)

Amblyopia cured by Hypodermic Injection of Strychnia.—Dr. Jos. Talko, of Tiflis, reports a very interesting case of amblyopia cured entirely and solely by this method. The doses used were $\frac{1}{12}$ raised gradually to $\frac{1}{4}$ of a grain of nitrate of strychnia; the injection was made in the neighbourhood of the affected eye; it seemed to answer best when done in the supraorbital region. The cure may be said to have occupied about seven weeks, and was then complete. It is remarkable that such large doses, repeated as often as once a week, produced neither local inconvenience nor constitutioual poisoning, with the exception of the most trivial symptoms. (*Klin. Monatsblätter f. Augenheilkunde*, Mai.)

Calabar Bean in Tetanus and Trismus Neonatarum. Dr. Monti has been trying this treatment in four cases of tetanus in new-born children, and one case of traumatic origin in a boy four years old. The traumatic case and two of the infants recovered; the remedy was mostly administered by subcutaneous injection. The author remarks on the extreme rarity of favourable results in this disease, and concludes, from his own experience and that recorded by other observers, that calabar bean offers a much better prospect of positive therapeutic results than does any other drug. The proper dose for subcutaneous injection of an infant a few days old seems to be $\frac{1}{30}$ to $\frac{1}{6}$ grain of the extract; in the boy of four years old Monti injected as much as $\frac{1}{2}$ grain, and a total of $6\frac{1}{2}$ grains of the extract were given altogether, by stomach and by skin. (*Jahrb. f. Kinderheilkunde*, Mai.)

Treatment of the Diarrhœa of Children.—Dr. Huber, of Memmingen, complains that almost all the various plans laid down by different authors are quite useless or unreliable. His own treatment, for some time past, has been partly dietetic and partly medicinal. He feeds the children on a broth made of corn-meal water and a little dripping. This being burnt in the pan, besides the formation of dextrine, certain products are formed which apparently have a direct effect in checking fermentation in the intestinal canal. It is at any rate a perfectly nourishing food, and never aggravates the diarrhœa. As medicine, Huber gives bismuth, which has been much recommended by French and Belgian authors. According to the age of the child, ʒ ss to ʒ daily of bismuth may be given; a dose should be given hourly till the diarrhœa abates, which often happens within a few hours. The remedy never leaves any evil after

effects, and it commonly puts an end to the danger which the profuse diarrhœa had caused in twenty-four hours. Huber disapproves of the colossal doses recommended by the French authors. He says that the treatment above described is successful also in cases where there is vomiting as well as diarrhœa. (*Deutches Arch. f. Klin. Med.* July.)

The Preparation of Medicated Pencils.—An interesting and practical paper has been written on this subject by M. Bouilhon, pharmacien. He remarks that the pencils of nitrate of silver, of tannin, and of various other substances, which are in ordinary use, are always both too hard and too brittle. The point is too hard and sharp, and cannot be applied without doing harm to some delicate tissues, such as those of the eye; and it is also so brittle that it constantly breaks to pieces just as it is being used. In view of these defects M. Bouilhon has devised the following improved mode of manufacture. He reduces the medicament, whatever it is, to impulpable powder, and mixes it with an equal weight of melted gutta-percha; the mass, while still hot, is rolled into the shape and size desired. These pencils are too elastic to break, and they can be scraped to any sort of point which may appear desirable in the particular case. It is necessary from time to time to revivify them by scraping, otherwise it may happen that the point contains so much gutta-percha, and so little of the medicament that the crayon is practically inactive. (*Bulletin Gén. de Thérapeutique*, Juin 30.)

The Administration of Digitalis in Heart Disease.—Dr. J. Bucquoy, Professeur Agrégé of the Paris Faculty, after speaking most strongly of the value of digitalis given in repeated and small doses in cases of heart disease with irregular and tumultuous action, and with deficient arterial and excessive venous blood-pressure, insists that experience shows the view of Beau to have been correct, that for the most part the action of digitalis, in calming and regulating the circulation is due to its direct *tonic* action upon the muscular walls of the heart. This idea once grasped, it is very easy to understand what are the real contra-indications of this drug. Since it acts, above all, by increasing the force of the heart's contraction, it is not to be prescribed in simple hypertrophy: here it is doubly forbidden by the energy of systole and the exaggeration of arterial pressure. For the same reason we must even more carefully abstain from its use in cases where the heart has developed sufficient compensatory power to overcome the obstacle offered to the blood-tide by a narrow valvular orifice. To add to this surplus of energy would be to dispose the heart to fatigue itself rapidly, and thus to provoke an early attack of syncope. Again,

digitalis must only be employed with great care in advanced cardiac cachexy, when the persistence of albuminuria and the yellowish tint of the face give us reason to fear that the heart is permanently injured by fatty degeneration. As to the doses in which digitalis should be given, Bucquoy adheres to the position of Traube, that to give large doses is to produce toxic effects which are precisely the opposite of the therapeutic ones. Of the powder of the leaves he gives one grain and a half to three grains during the twenty-four hours: he prefers *powders*, suspended in mucilage, to pills. Of tinctures, he much prefers the alcoholic to the ethereal; it is given in doses of ten to forty drops daily: digitaline, which should only be employed with great care, should be given in granules containing ·0156 grain, from one to four of them daily. Even with all this careful choice of the form of the drug, we must be incessantly watchful of its action. As long as the arterial pressure is being maintained or increased, there will be an abundant flow of urine; the failure of this secretion, as pointed out by Jaccoud, is an important sign that the *toxic* effects have been produced, that arterial pressure has been lowered, and venous pressure increased. (*Union Méd. et Bull. Gén. de Thérap.* Juin 30.)

Preparation and Purity of Bromide of Potassium.—M. Adrian, pharmacien, has undertaken a very useful research (*Bull. Gén. de Thérapeutique*, Juillet 15) into the purity of commercial samples of bromide of potassium sold in Paris; with a view, if possible, to explain some of the inconsistencies which are obvious in the accounts given by different authors of the activity of the drug, and especially as to its liability or non-liability to produce poisonous effects. He found the French samples of bromide very varying in impurity, but all very impure. Iodide of potassium was only present in two samples out of ten; and then not in very important quantity. But all the specimens contain large quantities of chloride of potassium, and notable amounts of free or carbonated potash, and sulphate of potash, and traces of bromate of potash. The quantity of pure bromide varied from only 62 to 91 per cent. of the total weight. It is clear that many of the above impurities are peculiar to the French mode of preparing the bromide, which M. Adrian describes: but some of the impurities, and notably the presence of *bromate*, which he thinks a very dangerous one, must pertain to the process employed under the sanction of the English Pharmacopœia. It is very much to be desired, we think, that some independent analytical chemist would take the matter up, and thoroughly examine the question of the purity of the English commercial specimens of this drug, which is rapidly acquiring a popularity and an extended use which will make it

hardly second to quinine, as a remedy in daily and hourly frequency of use.

Treatment of Syphilis by Hypodermic Injection of Corrosive Sublimate.—The treatment of syphilitic affections by the subcutaneous injection of mercury, suggested last year by M. Lewin, has been lately somewhat extensively practised in Germany, and in a late number of the *Contralblätt* reference is made to no less than four essays by different writers on this subject. In a report made by M. Grünfeld, the results of a series of investigations made in V. Sigmunds *Clinique* are given. The material employed for injection was a solution of corrosive sublimate of the same strength as that recommended by Lewin. Affections of the mouth occurred very rarely when due care was taken, and were never severe ; the mercury could readily be detected in the urine in one case after one-sixth of a grain had been only twice injected ; but as a proof of the slowness with which all traces of the poison are eliminated from the system it may be mentioned that it was still discoverable six weeks after the cure had been completed, and its administration had been discontinued. After employing the remedy in this mode in fifty cases Grünfeld states that he regards it as being applicable to the treatment of syphilis, and that its special advantage is the precision with which the quantity administered can be regulated ; but he has not been able to convince himself that the rapidity and certainty of the action of the drug are materially increased when thus employed, or that it diminishes the probabilities of a relapse. The pain and the possibility of ulceration of the skin, he thinks, should be fairly weighed against the advantage above mentioned. M. Uhlemann applied the solution of the sublimate in four cases, but was obliged to give it up in two of them (the quantity injected at one time being $\frac{1}{10}$ of a grain) on account of the violent local irritation that was established, and the general symptoms that were induced, amongst others dyspnœa, sleeplessness, and noise in the ears. In the two other cases gangrene of the skin at the point injected occurred ; and he was of opinion that no improvement in the general symptoms of the disease from which the patient suffered followed. M. Stöhr publishes the results he has obtained from the subcutaneous injection of the sublimate in ninety cases. He recommends that the skin should be cautiously pricked and completely penetrated, so that the solution is not injected into the tissue of the cutis, but into the subcutaneous connective tissue ; otherwise violent pain is produced, which is often followed by gangrene.

The quantity injected should not exceed, even if it equal, the amount ordinarily administered by the stomach, since after large doses mercurial intoxication is very likely to supervene One

instance is mentioned, where the injection of $\frac{1}{4}$ of a grain quickly induced syncope. The degree of pain which follows the injection of the poison struck M. Stöhr as considerably greater than was stated to occur in the original experiments of M. Lewin; and he states, there is considerable danger of the formation of an abscess at the point injected, and sloughing of the skin. Thus, in 1,500 separate punctures, the formation of an abscess occurred nine times, and gangrene of the skin twenty-seven times. M. Stöhr recommends that, in selecting the spot to be punctured, the least sensitive parts of the skin are to be recommended, and that those parts are especially to be avoided which are pressed on either in the sitting or in the recumbent posture. He found that salivation occurs more frequently and earlier than in the other modes in which mercury is applied, and, of course, with rapidity proportionate to the quantity injected at each sitting. The patients, after operation, were reduced as though recovering from a severe illness, and Stöhr is inclined to attribute an elevation of temperature that was observed to the action of the mercury. The primary cutaneous erruptions of syphilis are usually accompanied by slight elevation of temperature, but it never attains so high a degree as he observed after the application of the solution of the sublimate. All M. Stöhr's cases were those who had been recently infected with syphilis, and in whom no other treatment had been commenced. The ordinary amount injected on each occasion was $\frac{1}{8}$ of a grain, as he found larger doses not only dangerous but useless, unless to combat some serious affection, as iritis. On the other hand, he found the administration of very small quantities to have no effect. The largest quantity injected at successive sittings to one and the same patient amounted to $4\frac{3}{4}$ grains; the smallest to $2\frac{1}{8}$; and the mean amount was 3 grains. Relapses were observed to be as frequent as under other modes of treatment. M. Stöhr regards it as an inappropriate mode of treatment for out-patients.

It was most effectual in its operation in cases of squamous, pustular and ulcerated syphilides, especially in those forms in which the mode of treatment by inunction was inapplicable. It appeared of little value in those in which there were neoplastic formations of connective tissues, as in gummata, nodes, &c. The action of mercury is somewhat more rapid when applied in this than in other modes, the mean period occupied in the cure being twenty-three days, and whilst where inunction was practised it was twenty-five days, and where the bichloride was administered internally twenty-seven days. We may just add that in the *Gazette des Hôpitaux* M. Mores recommends a slightly different mode of subcutaneously injecting mercury employed by Scarenzio in cases of constitutional syphilis. This surgeon suspends from one-tenth to four-tenths of a grain of calomel in

mucilage, and injects it beneath the skin. Its introduction is followed by the formation of an abscess, and as this heals up the symptoms of syphilis disappear. It is rare that a second injection is required. Of twenty cases the mouth was affected in one instance. A. Martin has endeavored to avoid the production of abscess by injecting iodide of mercury in solution in iodide of potassium, and states that in eight cases in which he has tried it the constitutional symptoms of syphilis have disappeared without the occurrence of any local irritation. It would seem, therefore, that whilst the evils attendant on the subcutaneous injection of solution of corrosive sublimate are sufficiently great to render it doubtful whether it will be much practised in this country, it is quite possible that modes of combination may be discovered which will enable it to work with less violent local irritation, whilst the great advantage remains that the quantity introduced into the system may be more accurately determined than when administered by the stomach, and the total quantity employed be at the same time much less.

Sleeplessness of Young Children.—M. Moutard Martin states what we are sure will, if true, be hailed with delight by parents and nurses—viz. that, after warm baths and various other means have failed, the sleeplessness of young children can be overcome by means of bromide of potassium, which they bear well in doses of moderate strength. He has found it particularly useful during the period of dentition, when they are restless, excited, wakeful and cough. The drug should not be employed, however, if diarrhœa be present.

New Tonic.—M. Blanchard in a recent number of *Comptes Rendus* describes at length the characters and properties of a new remedy, allied to cascarilla, to which the name of conden or coni-xan has been given. The cortex of the root is the part employed. Of this an infusion is made; about one ounce being used for each dose. It is especially applicable to cases of dyspepsia and dysentery, and it is particularly valuable when administered in combination with quinine, since it obviates the injurious influence of the latter on the intestines.

[We regret to say that most interesting notes from Dr. Spencer, of Oxford (on Iodide of Potassium in Itch), and Professor Mackay (on Strychnia in Cutaneous Hyperæsthesia), have been lost, by the negligence of the Post Office authorities, along with a large quantity of other MS. This misfortune also accounts for a delay of a day or two in the publication of the *Practitioner* for this month.—Ed. Practitioner.]

Notes and Queries.[1]

A New Constant Battery.—Messrs. Weiss have directed our attention to a new form of galvanic battery, by which it is hoped to obtain all the special effects of the constant current from a large number of cells, while the apparatus itself will be portable. The battery is a modified Smee's (the elements being of zinc and platinised silver). There are 50 cells, and the box in which the battery is enclosed is about 20 inches long by 8 wide and 6 deep. The zinc and silver plates are in each couple firmly soldered together, and the whole numbers of pairs are let firmly into a frame of vulcanite, by means of which they can be lifted out of the dilute sulphuric acid which excites the current. It is proposed to make the box twice as deep, in which case it will be possible to carry the battery, shut, from place to place. The plates, dry, will then be stored in one compartment, and the cells, ready charged with acid, will be contained in the other, which will be fitted with an air-tight, indiarubber-lined lid. We have tested the action of this battery upon ourselves, and can say that so far as sensations go, it resembles very closely the effects of the Daniell's constant battery. It remains to be known whether this battery will produce the most specially characteristic effects of the constant current, viz. the excitation of wasted muscles (as, *e.g.*, in infantile paralysis) which are in the stage of insensibility to the interrupted current. We hope shortly to have the opportunity of trying this experiment; meantime it seems likely enough to succeed. It is a point in favour of the new battery, that Benedikt (as those who have read his interesting and valuable work on *Elektrotherapie*, which we reviewed in July 1868, will remember) employs a Smee's battery in private practice, where he must have a portable apparatus. Benedikt employs 18 Smee's cells, of larger size than those in Weiss's battery, and he varies the intensity of the current by a screw-

[1] The Editor, being desirous of making this department a useful medium of communication between practitioners, will be glad to receive short notes on theoretical or practical points in therapeutics,—brief jottings on those numerous queries which suggest themselves from time to time to a medical man as he "goes his rounds," but which he has neither the time nor, in some cases, the opportunity of answering. The Editor does not pledge himself to reply to every question addressed to him, but he hopes to make the "department" the means of supplying the information required and this he can only effect by the hearty assistance of his readers.

arrangement, whereby the plates can be immersed more or less deeply in the dilute sulphuric acid, which excites them without opening the box in which the battery is enclosed. There is an advantage in favour of Benedikt's battery in the greater size of its plates. But, on the other hand, the mode of varying the intensity of the current is much superior in Weiss's. However, it is impossible yet to decide on the actual value of the new battery. It remains yet to be seen whether electricity in sufficient quantity can be obtained from it, without involving inconvenient tension-conditions. Above all, it remains to try the test of its action on wasted muscles, and, we may add, of its power to allay neuralgic pain, which is a very conspicuous virtue of the constant current when obtained from a thoroughly efficient apparatus. We wish that the most favourable results may be actually obtained, for there can be no doubt that a really serviceable constant battery, which should be portable, would be an immense boon to the profession. Hitherto it has been impossible to get sufficient constancy with practical portability, and no doubt the common Smee's batteries are very inconstant. But we think there is good ground for hoping that in the new battery these defects may be remedied.

Dr. Richard Gumbleton Daunt, of Campinas, Province of St. Paul, Brazil, sends us the following interesting and important note:—"I saw in the October number of the *Practitioner* the statement of a case of tetanus cured by the bromide of potassium, but the case is not given, nor is the treatment recommended with the emphasis necessary to fix the attention of the profession so strongly as is desirable. I ought, therefore, to speak on the subject, and declare that, since the year 1864, I have employed the bromide of potassium in tetanus, and since then, in fourteen cases, I count twelve perfect cures. The fatal cases being so violent, and the predominance of disturbance in the functions of the respiratory nerves such that the incurable character of the cases, and their rapidly fatal termination, was intuitively perceived at the first glance. I have not exceeded ʒ ij of the bromide in twenty-four hours, nor has it been the exclusive medication. On the contrary, I employ a very varied treatment as to individual drugs, rarely, however—and only towards the close, and in presence of especial indications—using opium. I generally commence with full doses of aconitine, after a purgative dose of essential oil of turpentine, and on the second day generally commence the use of the bromide. I employ freely sulphate of quinine when there are sweats, or where there are obvious and marked periodical evacuations, and I also freely use wine. In former years I was very successful with belladonna as the principal remedy, this drug occupying the place now

accorded to the bromide. I employ cupping or leeches to the spinal column in certain cases, and have observed much relief from the application. I use entire warm baths, whenever a sufficiently large vessel is obtainable, giving two daily, and retaining the patient for one hour in the bath, whose temperature is preserved by the repeated addition of hot water. Before recurring to the bromide I treated successfully a desperate case with large doses of sulphur after the turpentine purge, and I know of not a few successful cures by large doses of sulphur in the hands of the unlettered people. I also treated successfully some cases with sulphuric ether, and know several Brazilian physicians who consider the internal use of ether to be the best treatment. As an external application to the spine I use an extract of tobacco; and I can positively affirm that the internal use of tobacco is an old popular treatment in the Province of Minos Jerves and in this Province of San Paulo, which numerous cures have accredited so much, that there are districts where the people prefer to give a tetanic patient in charge to a person acquainted with the popular tobacco cure, to entrusting him to regular professional treatment. I always, as a rule, recommend a generous diet when the degree of action of the maxillæ permit this, and where they do not, then nutritious enemata. Since I commenced to use the bromide I have felt myself master of the disease to such a degree as previously seemed unattainable. I shall look with curious impatience for the confirmation or condemnation of these results by the trials which it is reasonable to suppose will follow in Europe the publication of these remarks. I do not know if the board-like tension of the abdominal muscles is considered in Europe the most rigorously true pathognomonic sign of tetanus. I consider it so. I observe it often before the invasion of convulsions, and it is the last symptom to disappear. The turpentine I repeat during the course of the disease, according to the state of the intestinal canal. Alcohol in clysters, with a full dose of camphor dissolved in it, is also a popular and apparently useful remedy here. Quitting now tetanus, I fill the paper by saying that I endorse with the assurance of long and frequent use all I have seen in the *Practitioner* as to the virtues of muriate of ammonia. In sciatica it is invaluable with turpentine. There is no remedy equal to it for cleaning a furred tongue in non-feverish states. As a means of sustaining the digestive powers in old age it is unrivalled; also as a corrective of the intestinal mucous membrane of young children. Iterum, as a pulmonary tonic after bronchial affections. In adults I give 36 to 72 grains in the nyctemera, generally 48 grains in 12-grain doses. To children, 12 to 20 grains in three to 5-grain doses, according to age."

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Die hydriatische Behandlung der Diarrhöe im Kindesalter, auf Grund. d. physiol. Wasserwirkungen u. prakt. Erfahrungen. Wien: Seidel.

[1] Any of the foreign works mentioned below may be procured by application to Messrs. Kelly, Piet & Company, 174 Baltimore Street, Baltimore.

THE PRACTITIONER.

SEPTEMBER, 1869.

Original Communications.

ON THE INFLUENCE OF ALCOHOL UPON THE TEMPERATURE OF THE BODY.

BY C. BINZ,

Professor in the University of Bonn.

At the instance of the Editor of this Journal, I beg to present to English readers a few of the results which have been obtained at my instigation by some of the students who are working in my pharmacological laboratory.[1] Considering how extensively alcohol is employed in England for the treatment of serious forms of disease, I think I may venture to say that every experimental research bearing upon the questions of its nature and mode of operation will prove of interest. So far as I know, Lichtenfels and Fröhlich were the first who (in 1852) published any scientific investigations on that part of the alcohol question which bore special reference to the operation of small non-poisonous doses on the animal economy,[2] and the results they obtained were briefly as follows:—

1. The temperature in the mouth was 37°·0 Centigrade. About 24 ounces of beer, containing between 3 and 4 per cent.

1 C. Bouvier, Untersuchungen über den Einfluss des Alkohols auf der Körperwärme (Researches on the Influence of Alcohol on the Temperature of the Body): Pflüger's Archiv für Physiologie, 1869, August Heft.

2 Denkschriften der Mathemat. Naturwissen Klasse d. K. K. Akad. zu Wien, 1852, iii. p. 133.

of alcohol, were then drunk: in fifteen minutes the temperature had fallen to 36°·5, and remained so for sixty and even for one hundred minutes.

2. The normal temperature was 36°·9 Cent.; a flagon of wine containing about 8 ounces was drunk, and after forty minutes the temperature had fallen to 36°·6.

3. Four ounces of water containing 8 per cent. of alcohol, warmed to 36°·8 Cent., were quickly ingested. The thermometer stood previously at 36°·9; after five minutes at 37°·1; after twenty-five minutes at 37°·0; after forty-five minutes at 36°·9.

4. Two ounces of water, containing 17 per cent. of alcohol were drunk whilst lukewarm. In two minutes the thermometer rose from 36°·6 to 36°·9. In thirty minutes it stood at 36°·7; in forty-five minutes at 36°·6. We may easily convince ourselves then that, as the Viennese authors maintain, the primary augmentation of temperature is occasioned by the stimulating action of the alcohol on the blood-vessels of the mouth. More recently Tscheschechin,[1] of Russia, has published the results of some researches which he has made on rabbits. He mixed 10 C.cm. of alcohol of 80 per cent. strength with a little water, and injected the fluid into the stomach. He found that in twenty minutes the temperature sank from 39°·2 to 37°·2. Both the respiration and the pulse became quicker, and the vessels of the head were strongly injected. After the lapse of rather more than an hour the thermometer showed a temperature of 35°·7. The animal was insensible, but recovered in a few hours. Very similar results were obtained by Möller of Königsburg.[2] Both authors state that when large doses of alcohol are administered to warm-blooded animals, their temperature becomes reduced; and Möller adduces the well-known fact that a drunken man soon freezes to death when exposed to severe cold.[3]

All the observations detailed in the following pages were made with the Centigrade thermometer (Celsius'), the one now very generally employed both in medical practice and by the scientific world generally, and which, it may be added, like the decimal

1 Zur Lehre von der Thierischen Wärme (On Animal Heat). Reichert und Dubois-Reymond's Archiv, 1866, p. 161.

2 Ueber den Alkohol (On Alcohol). Berlin, 1867. A. Charisius.

3 Loc. cit. p. 24.

system, may be regarded as the most rational and intelligible instrument. In all about forty-nine experiments were made. The first series were undertaken with the view of determining the effect of very small quantities of alcohol upon the temperature of the body. We started with the conviction that the stimulating influence of the alcohol was as indubitable on the vital properties of the juices, as on the nervous system. But the results of our experiments were not in accordance with this view. I append only one of this series of experiments, since all the others gave identical or very similar results.

Experiment.—Strong terrier, about two years old, deprived of food for ten hours previously.

A.M	Temp.	Pulse.
10.40	38°·7′	114
10.50	38 ·7	110
10.55	38 ·6	110

Two cubic centimetres of alcohol 86° per cent., diluted with a little water, were subcutaneously injected.

A.M.	Temp.	Pulse.
11.10	38°·5′	112
11.30	38 ·1	118
12.0	38 ·2	116
2.30 P.M.	38 ·5	——

After a few days had elapsed, the same dog had one C.cm. of the same alcohol, diluted with water, injected subcutaneously. The temperature quickly sank about 0°·4 cent., but after the lapse of two hours was again normal.

Experiments on man, made with small quantities of alcohol, led to very similar results. Half a glass of light hock, or a small glass of cognac, caused a fall of from 0°·4 to 0°·6 in a very short time.

The second series of experiments were instituted, to determine the effects of large doses of alcohol.

Experiment.—A strong poodle, about four years old.

A.M.	Temp.	Pulse.
11.15	38°·4′	89
11.30	38 ·3	92
11.45	38 ·3	90

In the course of half an hour from this time, 25 C.cm. of alcohol, mingled with water, were introduced into the stomach. The animal made attempts to vomit, but was prevented by exerting pressure on the œsophagus.

In the course of six minutes, it fell over on its side in a state of intoxication.

P.M	Temp.	Pulse.
12.30	37°·5′	108
1.0	37 ·1	112
2.0	36 ·7	118
3.0	36 ·5	117
4.0	35 ·8	112
5.0	35 ·8	113

The dog was then apparently lively, but walked with a very irregular gait, and occasionally vomited some tough mucus, having a strong odour of alcohol.

Experiments were now made to ascertain the effects of poisonous doses; and it was found that both in dogs and rabbits a constant fall in temperature occurred, amounting to between 4° and 5° in from one to two hours, at which period death took place.

In the third series of researches, dogs, cats, and rabbits were treated by the injection of pus, or of the juice of putrefying fodder, and having been thus thrown into a state of fever, were treated with alcohol.

Experiment.—Into a large shepherd's dog of mongrel breed, 3 C.cm. of pus from an inflammatory abscess were injected beneath the skin of the back.

P.M.	Temp.	Pulse.
3	38°·9′	114
3.30—Injection of the pus.		
4	39 ·4	126
4.30	40 ·1	120
5	40 ·6	127
6	40 ·5	122

At this time 5 C.cm. of alcohol of 86 per cent., diluted with water, were injected into the stomach.

P. M.	Temp.	Pulse.
6.30	40°·0	130
7	39 ·6	126
7.30	39 ·2	120
8	39 ·0	122
8.30	39 ·3	126

As violent vomiting now supervened, 4 C.cm. of alcohol diluted with 6 C.cm. of water, were injected subcutaneously.

P. M.	Temp.	Pulse.
9	39°·0	132
9.30	38 ·8	128
10	38 ·8	131
A. M.		
9 next day	39 ·0	141

The injection of 5 C.cm. of alcohol, with an equal quantity of water, was now practised subcutaneously.

A. M.	Temp.	Pulse.
9.30	39°·1	136
10	38 ·7	133

No more alcohol was administered after this, and the febrile symptoms were now observed to rise rapidly in intensity, and the animal soon died. Throughout the whole experiment, no trace of intoxication was exhibited by the animal. After the alcohol had been given, it sat quietly in the corner, whimpered slightly, and had its eyes constantly open.

A final series of experiments were occupied with endeavours to solve various questions, and first, in what way alcohol operated when taken coincidentally with full diet. It was found, in regard to this point, that the so-called fever of digestion,—that is, the exaltation of temperature after meal time,—was comparatively slight. This was in accordance with the observation of Vierordt,[1] that after food the amount of carbonic acid exhaled is considerably increased, but when alcohol was taken with the food the quantity of that gas eliminated was less. Just so, here it appeared that the augmentation in the temperature of the blood, resulting from a full meal, either did not occur at all, or only to a very slight degree, when alcohol was taken.

[1] Wagner's Handwörterbuch der Physiologie, B. ii. p. 884.

In all these cases the temperature of the rectum was alone taken. An experiment made on a man in whom the temperature of the mouth and anus were coincidently taken by the introduction of a thermometer into each, showed that there was no difference between them, and that consequently the place where the temperature was taken was a matter of no importance. The same result was obtained in the case of a rabbit in which one thermometer was introduced *in ano*, and another beneath the skin of the back.

As a consequence of these investigations, the alcohol question may assume a somewhat different aspect. The introduction of the thermometer into medical practice, to which only the unscientific will object, has taught us that high temperature in the febrile state constitutes one of the most dangerous symptoms in various diseases. Alcohol is thus frequently called upon to act as a preservative of life by its antipyretic properties. It removes the conditions which induce paralysis of the brain and heart; and it should be employed in those cases especially where the thermometer shows that two high a temperature is present. In this respect it approximates to quinine in its action, but at the same time possesses in addition its well known stimulating action on the central nervous system and upon the heart. It is self-evident that its value in this respect is not in any way impaired by its antipyretic properties. In most cases, however, it will be found that the depression of the powers of the system is directly dependent upon the temperature of the blood, and passes off when it falls.

Two circumstances are opposed to the extensive employment of alcohol in acute diseases; first, its effect upon the pulse; and secondly, its influence on the tone and diameter of the vessels.

In all our experiments, the number, and it appeared also the strength, of the contractions of the heart rose. Whenever, therefore, such an effect is from any cause to be feared, alcohol is obviously an improper remedy to be employed.

According to Waller[1] and the remarkable researches of Cohnheim,[2] pus originates in the passage of the moderately enlarged

1 Philosoph. Mag. vol. xxix.

2 Ueber Entzündung und Eiterung (On Inflammation and Suppuration): Virchow's Archiv, Bd. xl. pp. 1—80.

white cells through the relaxed walls of the dilated blood-vessels. I have convinced myself by direct observation of the perfect accuracy of the statements of Cohnheim, though they are still contested by some investigators, and have elsewhere, though undoubtedly with another object in view, furnished a sketch of my own.[1] Alcohol induces dilatation of the capillaries of various regions of the body, but especially of those of the head, with great precision and certainty. And perhaps it may even be said that it causes dilatation of the capillaries throughout the body. If now there be already present a strong tendency to the formation of pus, it may be materially favoured by the administration of alcohol. We may, perhaps, be allowed to attribute the injurious effects which now and again have been observed to follow the employment of alcohol to these actions. Alcohol holds a secondary position as an antipyretic as compared with quinine, because the latter does not possess these disadvantages.[2]

It remains for us still to consider to what causes we are to attribute the refrigerating influence of alcohol, and there appear to be three possibilities:—that it may operate upon the nervous system; that it may act on the means which the system possesses of regulating its temperature by the perspiration; or, lastly, that it may exert its influence directly on the oxidizing processes which take place in the juices. After all that has been said upon the subject, it is the last action which seems to be by far the most probable.[3]

Further and more extended series of experiments, which have already been commenced, will, we hope, enable this question to be decided.

The foregoing part of these researches was already concluded when I was made acquainted, by a personal interview with the Editor of this Journal, with the researches of Ringer and Rickards, who had had the same object in view as myself, and who had

1 Experimentelle Untersuchungen über das Wesen der Chininwirkung (Experimental Inquiry into the Mode of Operation of Quinine). Berlin: A. Hirschwald, 1868.

2 Pharmacologische Studien über Chinin. Virchow's Archiv, 1869, Bd. xlvi. p. 139.

3 Cf. G. Harley on the Influence of Physical and Chemical Agents upon the Blood and the Respiratory Gases: Philosophical Trans. 1865, ii. p. 717.

also arrived at the same results upon the effect of alcohol in fever patients. (Todd, so far as I know, had only estimated the temperature by means of the hand, which is a very unreliable method.) The observations of these experimentalists had escaped my notice, because at the time when they appeared I was with the army in Bohemia.[1] Moreover it is singular that our more important journals do not contain any notice of them. I understand, however, that the industrious English authors have not referred to the earlier German investigations. In fact all our scientific views on this point have been preceded by the convictions held by soldiers, sailors, hunters, and especially those who work with fire in smelting-works and elsewhere, who have long maintained that the use of brandy cools down the temperature of the body. The differences in degree of the results obtained by the London observers and the continental observers at Bonn, must, I think, be attributed to this, that the former took the temperature of axilla exclusively, whilst the latter determined that of the rectum alone. On this account, perhaps, our experiments may be admitted to have a greater degree of accuracy. The sphincter ani embraces the thermometer in an hermetical manner, whilst, as every practitioner knows, a constant and persistent compression of the axilla is difficult to be attained. It may be provisionally noted that the authors above mentioned appear to have over-estimated the influence of the respiration upon the temperature. Liebermeister[2] has shown that increase in the frequency of the respiratory movements, whether accompanied by normal or by increased depth, exerts no remarkable influence on the temperature of the body. The cooling of the blood, through the respiratory process, to any considerable extent is thus probably only a theoretical conclusion, just as the supposed heating of the blood by alcohol was up to a very recent period. In the medical world of Germany, even now, alcohol in small doses is held to be not only a general stimulus for the nervous system, which it undoubtedly is, but also for the combustive operations. It is said that it contains a large proportion

[1] *Lancet*, August 25, 1866, p. 208.

[2] Physiolog. Untersuchungen über die Quantitativ Veränderungen der Wärmeproduction (Physiological Researches on the Quantitative Variations in the Production of Heat). Reichert und Dubois-Reymond's Archiv, 1862, pp. 661—683.

of hydrogen, which is burnt off in the body, and must on physical grounds augment its temperature.[1] This is true enough on theoretical grounds, but it has been overlooked that the influence which checks other oxidation processes is more powerful than the effect of its own oxidation.

What views are at present held upon this point in other countries, I am not very accurately acquainted with. Lallemand, Perrin and Duroy[2] have, indeed, with very large doses, seen a notable augmentation of temperature, but this bas been seen by no one else, not even by their countrymen Dumeril and Demarquay,[3]—viz. from 37°·0 to 38°·5, and then again 36°·5; from 36°·5 to 37°·0, 38°·5, 35°·5, &c., &c. I am unable to offer any explanation of this extraordinary exaltation. Herr Bouvier and myself have not observed it once in forty-nine cases, the opposite condition constantly occurring. The Parisian authors refer only to three experiments directed to the determination of this point. The difference in the number of experiments is therefore in our favour, whilst the construction of thermometers has made important advances since 1860. We may, therefore, be permitted to doubt whether in any instance these observers really observed an exaltation of temperature result from the employment of alcohol.

1 C. O. Weber. Die Gewebs-erkrankungen (The Diseases of the Tissues). Erlangen, 1865. Pitha und Billroth, p. 628.

2 Du Rôle de l'Alcoöl et des Anæsthétiques dans l'Organisme (On Rôle of Anæsthetics in the Organism). Paris, 1860. P. 47.

3 Loc. cit. p. 11.

ON THE TREATMENT OF TRAUMATIC TETANUS WITH THE CALABAR BEAN.

BY EBEN WATSON, M.D.

Professor of Phisiology in Anderson's University, and Surgeon to the Royal Infirmary, Glasgow.

Since my last publication on the Calabar bean in tetanus,[1] it has been my lot to superintend the treatment of no fewer than six cases of the disease, and in this communication I intend to state these cases as briefly as possible, and then to offer a few remarks on the employment of the bean, and on the amount of success which is to be expected therefrom.

Case I.—D. D——, aged 28, was admitted to the Royal Infirmary on 16th November, 1868. He stated that ten days before admission he fell in the street and hurt his nose and forehead. The nose was still considerably inclined to the right side, as if its bones had been fractured. The skin of the nose was ruffled in the fall, and this part was now covered with a scab. Patient also stated that from the very time of the injury he began to feel stiffness and pain in the muscles of his neck and lower jaw, but he said he had now no pain, except very slightly in the back of his head. The stiffness of the lower jaw was, however, quite decided, for he could not separate the teeth more than a quarter of an inch, and the sardonic expression was marked. The muscles of the back of the neck were also rigid, but there had not as yet been any general convulsions.

At 8. P. M. on the evening of admission, treatment with the physostigma was commenced. It was given in the form of a tincture, every ♏v of which contained $\frac{1}{12}$th part of a grain of the extract. The dose was repeated every half-hour for the first

[1] *Glasgow Medical Journal* November, 1868.

three hours, during which time he had two fits of general convulsions, but in the intervals felt quiet and easy and perspired freely. The doses were then doubled, and the fits became gentler and fewer during the night. But in the early part of the morning the bean was given with less regularity, and therefore I found him rather more rigid again at my visit (8.30 A.M.).

November 17.—The doses were increased rapidly, and the bowels were acted on with croton oil. ℥xxv of the tincture were given every half-hour during this morning, and by 2 P.M. he was much more relaxed and could take some beef-tea without inducing the spasms. He still, however, had a violent general convulsion about every three or four hours.

November 18.—This morning his teeth were again found tightly clenched, and the muscles of the abdomen were quite hard, yet the patient declared himself better, and could swallow more easily. He had no pain. The tincture (℥xxv) was continued every half-hour during the day, and he had no severe convulsions. During the night the doses were given only every hour to admit of a little sleep, and with each dose of the bean whisky or beef-tea was administered.

November 19.—Patient was evidently worse; more generally rigid and frequently convulsed. The doses of the bean were increased to ℥xxxv, and given every hour this forenoon, but the convulsions were so severe that inhalation of chloroform was resorted to on two occasions; but in one of the fits, before the chloroform acted, he died at 11.30 A.M. The chest was so rigid, and the respiration was so completely arrested, that the chloroform was really not inhaled,—a striking illustration of its inefficacy during a severe tetanic convulsion.

CASE II.—M. D——, aged 25, a night carter, was admitted into the Royal Infirmary on the 14th December, 1868.

On the morning of admission, patient's cart-wheel passed over his right ankle. Both bones were fractured with considerable bruising of the soft parts, in consequence of which large bullæ rose on the skin, and a small portion of it sloughed. Carbolized water-dressings were used, and the patient did well till the 21st December, when he complained that he could not open his mouth. On examination it was found that his teeth were already clenched and his back stiff and slightly arched. His

expression was sardonic, and he had very decided convulsive starts. He confessed that these symptoms had been coming on during the previous night, but that he had not thought them worth mentioning.

One grain of the extract of the bean dissolved in whisky and water was at once given by the mouth. An hour afterwards another grain was similarly given, and after waiting one hour more, and finding no effect produced, two grains were given for the third dose. Still no relaxation ensued, and in half an hour a fourth grain was administered, and half an hour afterwards three grains at a dose were given—in all 8 grains of the extract within four hours. The muscles of the lower jaw now seemed slightly relaxed, but doses of one grain of the extract were continued during the afternoon. It was, however, apparent that the usual effects of the drug were not being produced, and I therefore changed the method of administration for that of subcutaneous injection with Wood's syringe. I injected $\frac{1}{6}$ gr. of the extract in watery solution under the skin on each side of the neck, and shortly afterwards I repeated the injection in the loins. The muscles in the parts named seemed by and by to be slightly relaxed, but no great general effect was produced. After two hours' interval the injections were repeated. The patient was then very rigid and had frequent fits of opisthotonos, but a curious change occurred in the state of the muscles of the face and neck. The former seemed to relax to some extent, and the latter to remain contracted; so that the teeth, instead of being tetanically clenched, were pretty widely separated, and kept so by tetanic contraction of the depressors of the jaw. When, however, the convulsive fits were severe, the teeth again were clenched, but the lips were spasmodically separated, so as to give the face a very strange expression. One grain of the extract was given every two hours during the night, and the bowels were well opened. Pulse 80, soft and full, but during the spasms it rose to above 120.

December 22.—This morning patient seemed much in the same state, but weaker. Breathing more difficult and unsatisfactory, from the continued rigidity of the chest. Pulse 130 to 140. Patient had not slept, and had taken little nourishment during

the night. At 9 A. M. ⅓ grain of the extract in solution was injected under the skin of the neck, and the spasms were less severe, though rather more frequent. At 9.30 four grains of the extract in water were injected into the rectum, and two hours afterwards subcutaneous injections were practised, both in the neck and loins. Notwithstanding all this, the spasmodic fits continued unabated, and the patient was fast becoming weaker. Enemata of beef-tea with brandy were given, but were expelled with the contents of the bowel. The patient seemed in a stupor; his face was livid and covered with sweat. The pupils were contracted, but the mouth was wide open. The twitchings continued, but in a short time two violent fits of opisthotonos, rapidly succeeding each other, closed the scene at 1.20 P. M. The man died of pure asphyxia, with his chest quite fixed.

These two cases were both extremely acute as well as severe. In the first case, the patient thought he felt stiffness in his neck from the very time of the accident, but this could not have been tetanic stiffness, which I believe only commenced the day before his admission to the hospital, therefore he died on the fourth day of the disease. In the second case, the man died on the third day of the disease.

Both cases were remarkable for the slightness of the external wound, but both had simple fractures, and in both cases the long continuance of rigidity of the respiratory muscles was very noteworthy.

As to the action of the bean, I attempted in the first case to mitigate rather than to check the disease, and if possible to bring it into a chronic state. I therefore used, especially at first, rather small doses of the extract, though I had soon to increase them to get any effect. In the second case, I altered my tactics, and tried to give the disease a check before the patient's strength became exhausted. I also prastised subcutaneous injections in this case, but whether from the weakness of the drug or the severity of the disease no good or sufficiently prolonged effect was ever produced, and the patient died with his chest fixed, as if it had been held in the grasp of a giant.

Greatly dissatisfied and disappointed with these results, contrasting strongly as they did with my former experience of the

drug, I set to work once more with experiments on rabbits, and found that really the bean and its preparations were less potent than I had formerly found them. Thus one rabbit took 7½ grains of the extract in repeated doses, all administered within an hour, before it showed the slightest signs of paralysis. Another rabit took ℥xxxv of the tincture prepared by percolation through the powdered bean before it gave any evidence of the action of the drug.

Nevertheless a small drop of either of these preparations, when applied to the conjunctiva of the human eye, produced great contraction of the pupil.

I then obtained supplies of the bean, not only from various druggists but from private parties, especially from my friend Mr. Thomson, lately a missionary at Calabar, and now practising medicine in Liverpool. These specimens appeared to be much the same in their outward characters, and to vary but little from each other in potency. In answer to my inquiries Mr. Thomson informed me that—

1. The natives speak of some kinds of bean as being more powerful than others. "The little dark-coloured much-twisted samples" are the most virulent. Roasted or boiled beans are said to be innocuous, but Mr. Thomson is not aware that there are two species of plants yielding beans so similar as to be mistakable for each other.

2. The plant is to be found elsewhere than at Calabar—as, *e.g.* at Sierra Leone—"or," he adds, "at all events a plant furnishing beans *very like the Calabar species.*"

3. The beans in Calabar are collected by young ignorant persons, on the banks of rivers down whose streams they have floated. They are probably all ripe, or they would not have fallen from the pods, and they are most abundantly found in October, November and December.

I may add that there is, so far as I can ascertain, no regular supply of these beans as yet established, and it is very possible that several kinds of them are at present mixed together by druggists in order to have enough for the preparation of extracts and tinctures to supply the demand of the market. I can prove that some of the extracts at present sold are different from others. Thus some are entirely soluble in spirit, and others

are not; and, what is much more important, some are exceedingly weak in their physiological effects compared with the early and more carefully prepared specimens. This I have proved by experiments on rabbits and others of the lower animals, and I am quite persuaded that the same thing has been sadly shown in my recent experience of the treatment of tetanus in the human subject. For I was in this state of uncertainty and suspicion as to the genuineness of the drug and the strength of its preparations when I was called on in rapid succession to treat the following cases. It will, however, be observed that in them I employed the drug more freely,—using subcutaneous injections whenever there was any difficulty of swallowing, and sometimes employing the crude powder of the bean when it could be swallowed by the patient.

Case III.—W. S——, aged 14, was admitted into the Royal Infirmary on the 16th January, 1869.

On Thursday the 7th instant, patient, while assisting in a slaughter-house, was wounded in left leg by the horn of an ox. The wound was dressed and the boy remained well till two days before admission, when he complained of stiffness of the jaw Dr. Dunlop saw him, and recommended him to my care in the Infirmary.

January 16.—When admitted he had all the symptoms of tetanus, his teeth quite firmly clenched, his chest, belly, and back very rigid, but the limbs free. Pupils rather dilated; pulse 110; bowels confined. He had a drop of croton oil in castor oil, and began the calabar bean at 8 P.M., taking gr. j of extract every half-hour for three times, and then gr. j every hour for the next twelve. At 4 A.M. he had a violent fit of general spasms producing opisthotonos.

January 17.—At 10 A.M. his expression was improved, and his muscles were considerably more relaxed than they had been; pulse 88. Patient had vomited a good deal of frothy mucus. He had taken no food except a little milk occasionally. The Calabar bean was continued, and as the bowels had not moved another drop of croton oil was given. At 10 P.M. he was still better, being even more relaxed in his muscles, and the bowels had been freely moved. Has not slept much, and has vomited frequently. Pulse 108, full and soft; gr. j of extract to be given every two hours,

and stimulants to be freely given during night. Tincture of cannabis indica to be given with the bean in ♏xxx doses every four hours, unless patient slept. At 11 P.M. patient was found much relaxed and asleep ; mouth could be opened about an inch, but shortly after this time he had a severe fit of general spasms, and became very weak. As he could not swallow, brandy in beef-tea was injected into the rectum, and repeated as the patient could bear it, and in one of the injections gr. iij of the extract was administered. Notwithstanding this, at 3 A.M. he had a most violent spasm, and the teeth remained firmly clenched. He swallowed gr. j of the extract in a little whisky and water, but in a quarter of an hour he had another violent fit of spasms, and the muscles of the neck and back remained quite hard. Patient could not swallow, but gr. ij of extract were administered by injection. In about half an hour the mouth could be opened more than an inch, and the muscles generally were quite soft.

January 18.—The above-mentioned relaxation continued with only a few twitches ; no bean had been given, but stimulants and food as they could be taken ; bowels had been twice moved. At 1 P.M. slight occasional spasms occurred, and therefore gr. j of the extract was given *per anum*, and at 2 P.M. patient drank about half a pint of beef-tea, and continued relaxed. At 4.30 P.M. a very violent spasm occurred, and chloroform was tried ineffectually, and, as breathing was long delayed, artificial respiration was attempted with success. Patient remained afterwards more relaxed, though still in parts rigid. At 6 P.M. tincture of cannabis indica and spirit of sal-volatile (♏xx of each) were given in water, and in an hour and a half afterwards gr. j of the extract by the mouth. This was followed by relaxation of the rigid muscles, which continued and was kept up by injections of gr. j of the extract in beef-tea into the rectum until 9 P.M., when during the administration of some brandy and water he seemed to choke and gasp. He then fell into a general fit of spasms, which was never wholly recovered from till he died at 2 A.M.

Although this was from the first a very acute and severe case, yet the influence of the bean was quite marked, and the progress of the case was favourable until a few hours before death. It seems very likely that the brandy and water had irritated the

glottis, and thus caused the spasms, which in the state of weakness produced partly by the disease, and no doubt partly by the drug, he was unable to bear. The case teaches two lessons: one, the importance of very skilful and careful nursing in this disease; the other its deceitfulness, and the great uncertainty of the patient's prospects, even when these seem most promising. This is especially true until the disease has passed its acute stage.

Case IV.—R. S——, aged 12, was admitted to the Royal Infirmary on the 2d April, 1869, with a burn from molten iron on the hips, thighs, and feet.

On the 14th symptoms of tetanus showed themselves, and therefore, the bowels being loose at the time, the tincture of the bean was immediately commenced. He had ℥xxx every hour during the day, and three times he had as much of the solution of muriate of morphia along with it.

April 15.—He was rather better this morning, and the same treatment was continued; soup and whisky and water were given when he could take them.

April 16.—Complained of pain in back and neck, and the muscles were hard there. The same treatment was continued, and about midnight he was asleep and relaxed all over. The doses of the bean were only given every three hours to allow patient to sleep.

April 17.—Seems more relaxed, but has twitching spasms in diaphragm, and is weaker. About 10 P.M. he was found in a state of prostration, with great sweating, and pupils contracted. He was quite insensible, and breathing was difficult; still the spasms could be excited. Stimulants were given and the bean delayed.

April 18.—Patient quite recovered from his state of prostration. He seems much relaxed generally, but slight spasms still occasionally recur. The tincture of the bean and of cannabis indica were given every three hours, but at night the solution of muriate of morphia was repeated at patient's own request.

April 19.—Patient in nearly the same state; perhaps a little weaker. The bean and morphia were continued.

April 20.—Patient is decidedly weaker to-day, but not worse otherwise; nevertheless in the afternoon he had several severe

convulsions without any assignable cause. The bean did not seem to act in time to check them, and the stimulants did not prevent his sinking. He died at two o'clock on the 21st.

I was much disappointed with the result of this case. It seemed to be progressing favourably till the very last day, when it suddenly became worse, and ended fatally. The only way to account for this result is, that the original cause of the disease was a severe burn, and that during its progress a new irritation or excitement of the tetanus may have been caused.

Case V.—W. M'A——, aged 25, was admitted on the 25th June, 1869. A week ago he had his little finger and part of hand crushed, so that the finger had to be amputated. Symptoms of tetanus commenced the day before admission, and have progressed very rapidly since, and swallowing is attended with great pain and difficulty. Pulse 112. Bowels have been regular since injury.

A dose of croton oil in castor oil was first given, and then gr. xij of the powder of the bean with ℥xx of tincture of cannabis indica. The bean was repeated every hour, and the indian hemp every second hour during the night.

June 26.—The patient has been much relieved, and can swallow better. His muscles are considerably relaxed, but during the night he had several opisthotonic spasms. He was, however, brought thoroughly under the influence of the bean, and became so sick as to vomit frequently. The severity of the convulsions then diminished, and he drank milk freely, but the twitches were very frequent. They occurred once in every two or three minutes, even when kept quite quiet. The swallowing likewise became less perfect, so that nourishment had to be given by injection into the rectum.

June 27.—This morning the patient was thoroughly under the influence of the bean, and his mouth could be easily opened, and the spasms were both slight and infrequent. But in the forenoon he did not get the bean so regularly, owing to his sickness, and consequently the fits became stronger and more frequent. In the evening subcutaneous injection of the tincture was resorted to, and the spasms rapidly diminished again as the influence of the bean gained the ascendency. But from some cause or other he had a very severe fit of spasms about mid-

night, and it both frightened and pained the patient greatly, so that he cried out.

June 28.—He complained of pain in his back, but was well under the bean, and greatly relaxed. His spasms were so slight that the medicine was given at longer intervals to-day. During its course, however, he became very unruly, and talked incoherently and wildly about self-destruction. He often tried to strangle himself with his own hands, and when prevented he voluntarily bit his tongue that he might bleed to death. Strange to say, all this time he had no fit of convulsions; but on the 20th, at 5 A.M. when a dose of the bean was being given, he resisting furiously, a violent paroxysm occurred—his chest was completely fixed, and in spite of the efforts made to accomplish artificial respiration, he died in the fit.

In this case, which was carefully watched and treated by my present house-surgeon, Mr. Aikman, I combined anodynes with the bean, and I believe the treatment would have been successful had it not been for the strange suicidal efforts of the patient. These, of course, both weakened him and excited the fits. In his, as in other cases wherever the swallowing was difficult, I had recourse to subcutaneous injections of the tincture of the bean;—not that I fancy there is any less absorptive power in the lining of the stomach in tetanus than in any other disease, but simply to avoid the muscular exertion of the act itself.

CASE VI.—J. Q——, aged 12, was admitted to the Royal Infirmary on the 23d July, 1869, with symptoms of tetanus of five days' duration, following a lacerated wound of left hand.

After the bowels had been opened by croton oil, patient was rapidly put under the influence of the Calabar bean. The tincture was at first used along with stimulants, and as soon as the bean took effect all tetanic symptoms disappeared, and the boy slept quietly. But on the morning of the 24th, a new specimen of tincture having been used for some hours, the symptoms reappeared with considerable violence. The powder of the bean was then substituted for the tincture, and used in doses of 10 grains every hour. The result was that during the rest of this day, and also during the 25th, he had almost continuous rest, although occasionally a slight arching of the back

might be noticed. This occurred most distinctly about the times when the doses were due.

July 26.—About 1 P.M. to-day, the doses having been continued night and day as formerly, deep depression and sickness exhibited themselves. Therefore, lest the powdered bean should have accumulated in the stomach, a purgative dose of rhubarb was administered, and the bean was not given for some hours; but whenever slight spasms began to show themselves the drug was resumed at intervals of two hours.

July 27.—Since yesterday he has had no opisthotonos, and only twitches occasionally, but these increase if the bean is not given regularly every two hours. It was noted in this case that the pupils, contrary to all my former experience of this drug, became contracted and remained contracted during the whole period of the action of the bean on the system; so that the repetition of the doses was mainly regulated by the state of the pupil. If this were a constant or even a common phenomenon, it would be an extremely useful guide in giving the bean, but that effect on the pupil is not often seen unless the bean is applied to the eye itself.

July 28.—The benefit derived from the bean was by this time so apparent to the boy himself that he frequently called for it.

July 29—31.—During these days he remained in much the same state, but taking his food much better and with considerable relish.

August 1.—Twice to-day he had a peculiar tremulousness of his hands, but this disappeared on the administration of stimulants. On the 2d and 3d various attempts were made to lengthen the intervals of administering the bean, but the stiffness and arching of the back always made it necessary to recur to the drug at the end of the two hours. He continued to masticate his food well and easily.

August 9.—Has been sitting up in bed to take his meals, and is altogether better.

August 19.—Has had no bean since the morning of the 10th, and continues quite well. He has no spasms, and is running about the ward freely. He will be dismissed cured in a few days.

I cannot conclude the record of this case without stating that I believe its successful result is in a great measure due to the

way in which the patient was watched in the early stage of his disease by my house-surgeon and dressers, who took the duty by turns both night and day.

I have thought it right to put these cases in some detail before the profession that they might be judged of independently, and thus assist in settling the question as to the value of the Calabar bean in traumatic tetanus. I fear that this disease is looked on by most surgeons as so utterly hopeless that cases of recovery from it come upon them as agreeable surprises, and they are for that reason led to publish them. But this renders it difficult, or perhaps impossible, to learn anything from the statistics of the subject. There are, however, some interesting data of a statistical kind in our possession regarding tetanus. Thus the late Professor Laurie,[1] in 1853, collected from the journals of the Royal Infirmary 50 cases of traumatic tetanus. They were treated in many different ways, and the results were 44 deaths and only 6 recoveries. Of cases previously published he tabulated 171, in which there were 80 deaths and 91 recoveries; but the contrast here makes it obvious that if all the cases from the practices of the surgeons to whom these cases occurred had been published, the result would have been very different.

Dr. Busch[2] tells us that of 21 cases he had 7 recoveries, *i.e.* 33½ per cent., and that Demme had 7 per cent. of recoveries, Blanc 43 per cent., and the surgeons in the American war 7·4 per cent. Still further it is interesting to know that Busch treated 12 cases and Demme 21 with curari, *i.e.* 33 cases with 14 recoveries and 19 deaths.

Again, I have treated 10 cases with the Calabar bean, and had 6 deaths and 4 recoveries. In this summary I omit one other case seen by me just when the patient was dying, and who therefore was not treated at all.[3]

Of the cases mentioned by Dr. Fraser in the *Practitioner*, August 1868, and collected by him with great industry, I am obliged to confess a doubt as to the second. For Dr. Fraser does not say that it was published by M. Giraldés, and on referring to M. Lemaire's case[4] I find that M. Giraldés was consulted in

1 *Glasgow Medical Journal*, vol. i. p. 353.
2 *Medical Times and Gazette*, 1869, vol. i. p. 474. 3 See *Lancet*, 1863.
4 *Bulletin General de Therapeutique*, vol. lxvii. p. 81.

regard to it, and therefore he, in all probability, mentioned that same case as a curious one at the Surgical Society. At all events he does not seem to have published any similar case, and therefore the *Bulletin Général de Thérapeutique*, in reproducing my first cases from the *Lancet*, remarks that, though this treatment had been speculated on, "nul le croyons-nous, ne l'a mis en pratique, et les deux faits observés par M. Watson (de Glascow) pour leur priorité nous semblent dignes d'être rapportés." I believe then that I published in the *Lancet* for March 1867 the first case of traumatic tetanus ever treated by Calabar bean. Lemaire's case was not traumatic. Excluding it then, and the supposed case of Giraldés, we have published by others the following:—2, both recoveries, by Dr. Alexander;[1] 1, a recovery, by Dr. Campbell;[2] 1, a death, by M. Bourneville;[3] 1, a recovery, by Mr. Ashdown;[4] 1, a death, by M. Bouchat;[5] 1, a recovery, by Dr. Alex. J. Macarthur;[6] and 1, also a recovery, by Drs. Boslin and Curron.[7] These may best be seen in the tabular form as follows:—

	Cases.	Recoveries.	Deaths.
Dr. Watson	10	4	6
Dr. Alexander	2	2	0
Dr. Campbell	1	1	0
M. Bourneville	1	0	1
Mr. Ashdown	1	1	0
M. Bouchat	1	0	1
Dr. Macarthur	1	1	0
Drs. Boslin and Curron	1	1	0
Cases treated	18	10	8

This statement, then, shows favourably for the bean. On the whole, however, I believe that the physiological effects of the drug form the best warrant for its employment in tetanus. We

1 *Glasgow Medical Journal*, November, 1868.
2 *Lancet*, August, 1867.
3 De l'Emploi de la Fève de Calabar. Paris, 1869.
4 *British Medical Journal*, March 21st, 1868.
5 *Bulletin General de Therapeutique*, vol. lxxiv. p. 363.
6 *Edinburgh Monthly Magazine*, 1869.
7 *Chicago Medical Journal*.

cannot expect infallible cures for any disease, far less for such a disease as this; but what I would urge is that, while we had no reason to look even for benefit from most of the remedies formerly used in cases of tetanus, we have reason from physiology to expect relief in that disease, even when we cannot hope for cure, from the Calabar bean; and this has been marked by my experience of its employment. It will be noticed in reading the cases just related, that in all of them considerable relaxation was produced, and the patient often expressed himself as greatly relieved, even when there was little real or permanent improvement of his condition. Surely this is something gained, and surely it indicates that we may learn by and by to use the drug to still greater advantage, and to cure a greater proportion of cases.

I cannot here enter fully upon the very interesting physiological action of the bean on the lower animals. I may, however, refer to my paper on this subject in the *Edinburgh Monthly Journal* (vol. xiii. p. 999), and I may also state that I have lately repeated and varied these experiments without finding any reason to change the opinion I have there expressed. In short, the bean acts primarily on the spinal centres of motion, gradually obliterating voluntary power without affecting sensation. It early destroys the power of co-ordination of movements, and soon afterwards the susceptibility of reflex motions.

While, therefore the morbid anatomy of tetanus is by no means settled, yet from what is well known of its living pathology, it is evident that the bean, alone or combined with an anodyne, fulfils all the requirements of the case, and that it does so in a way more direct and physiological than is at all usual in therapeutics. We must not, then, be discouraged by a large proportion of deaths from tetanus, even in cases where the bean has been carefully and skilfully employed; neither must we think it useless because sometimes it seems insufficient to combat this terrible antagonist. If in using it we are upon the right road, we can only attain to a better success by continuing to pursue that road until a better and safer has been discovered.

ON AN IMPORTANT NEW APPLICATION OF CALABAR BEAN.

BY T. WHARTON JONES, ESQ. F.R.S.

THE following case, which will form a part of my forthcoming work on "Amaurotic Failure of Sight, caused by Railway and other Injuries to the Head and Spine," is so important as to deserve earlier record. Not only does it introduce to our notice a new resource in the treatment of paralysis of the third nerve, but it suggests interesting considerations as to the true physiological action of the bean.

"Mrs. E. W. a widow, aged 41, was admitted into University College Hospital under Mr. Wharton Jones, first as an out-patient, and shortly afterwards, May 31, 1869, as an in-patient. She laboured under complete paralysis of the third nerve on the left side of a rheumatic character.

"Had rheumatic fever two years before and was laid up therewith for three or four months. About the middle of April of the present year she was exposed to a draught of air, and almost immediately after noticed that there was something the matter with the left eye, as she could not raise the upper eyelid."

On examination of the affected eye at her admission, it was found that the patient could not raise the upper lid, nor turn the eyeball towards the nose, nor move it upwards or downwards. Besides this, the pupil was in the middle state of dilatation, and incapable of contracting under the stimulus of light.

The patient complained of pain over the eyebrow, in the temple, and in the side of the head.

When I first saw the case, I dropped a solution of atropia into the left eye for the purpose of testing the action of this agent on the dilator pupilæ. The ensuing dilatation had passed off, and the pupil had regained its previous middle state before the patient presented herself again. She was now taken into

the Hospital and put on good diet, as it appeared that she had been living very poorly of late. At the same time she was ordered a pill containing 1 grain of calomel, ½ grain of extract of colchicum, and 2½ grains of Dover's powder night and morning.

I now for the first time dropped a solution of the extract of Calabar bean into the affected (left) eye for the purpose of testing the action of that agent on the paralysed sphincter pupillæ. In doing so, the idea glimmered through my mind that the Calabar bean might possibly exert a beneficial action on the paralysed levator palpebræ, and on the similarly affected recti muscles.

The effect of the application of the Calabar bean, made on the 31st of May, was to contract the pupil to the size of a pin's head in the usual time.

On the 2d of June, the action of the Calabar bean on the pupil had passed off, but it was found that the patient had acquired some slight power over the upper eyelid, so as to raise it a little by a strong effort. Seeing this, I repeated the application of the Calabar bean, as above mentioned, and discontinued the other treatment.

The quantity of Calabar bean used at a time was about a ¼ grain of the extract (an extract for which I am indebted to Dr. Fraser of Edinburgh) reduced to the state of an emulsion by the addition of a few drops of water. This was freely poured into the eye.

On the 4th of June the patient could raise the upper eyelid a little more. The Calabar bean drops were accordingly repeated and continued thereafter three times a week. Under this treatment, I found at every visit I made to the hospital that the power over the levator palpebræ had increased.

On the 14th of June, the report states that the patient could raise the upper eyelid sufficiently for the purposes of vision, and that she could move the eyeball both inwards and upwards, but only a little downwards. There was still double vision.

By the 21st of June, the patient had acquired nearly complete command over all the muscles of the eyeball, except the inferior rectus, and could raise the upper eyelid as well as that of the right side, and there was but slight diplopia.

On Monday, June 28, it is reported that Mrs. W. could raise the left upper eyelid well, could turn the eyeball towards the nose

and upwards well, but could not quite fully turn the eyeball downwards. On looking downwards, therefore, she saw double.

Wednesday, June 30.—All the movements of the eye perfect, and no double vision, except in a slight degree on looking downwards. In regard to the pupil, it is to be remarked that it became contracted to the size of a pin's head at the usual interval after each application of the Calabar bean, but again returned to the previous middle state when the influence of that agent had as usual passed off.

The sphincter pupillæ has not, like the levator palpebræ and muscles of the eyeball supplied by the third nerve, as yet regained its power permanently, so as to contract under the influence of the action of the light on the retina. It is to be noted that the pupil of the right eye is in a nearly similar state, being but little moveable under the stimulus of light. The adjusting power for the vision of near objects is impaired in both eyes, so that the patient requires the help of convex glasses sixteen inches' focus to read with. The sight has otherwise remained good.

The history of the above case, taken together with some further observations and experiments which I have made, throws light, not merely on the action of Calabar bean, but on the nature of the very interesting antagonism which exists between the effects of the latter and those of atropia. In the first place, I shall relate as a clinical supplement to this example of the action of Calabar bean, an interesting experiment with atropine in a case of paralysis of the external rectus, depending, probably, on some intra-cranial affection. I was led to try this remedy by the consideration that the sixth nerve, which supplies the external rectus, is very closely connected with the sympathetic, and that the action of atropia is probably upon the latter. The patient had been sometime under treatment, and under the use of iron and nux vomica his general health and strength had greatly improved, and the paralysis of the external rectus had considerably diminished. This case, being of probably intra-cranial origin, was likely to be less amenable to *local* treatment than the other. As soon, however, as I began to drop atropia (gr. iv—$\bar{3}$j) into the eye, the progress of the external rectus towards recovery was strikingly hastened, and all other treat-

ment was discontinued, as unnecessary. This observation, together with the case first related, seems to point clearly to an antagonism between the two drugs, as regards effects upon the eye; atropine stimulating the sympathetic, Calabar bean the third nerve. This is not the whole of the antagonism, however, between the two agents.[1] I have made a series of observations, upon the circulation of the frog's web and the rabbit's ear, as affected by the local application of Calabar bean and atropine respectively, from which the important circumstance appears clearly made out, that *while atropine contracts the arteries, Calabar bean contracts the veins.* In the frog's web only the atropine effect can be clearly demonstrated, for the *veins* of the web are hardly at all muscular; but in the rabbit's ear the effect of Calabar bean upon the veins can be well seen, the latter being well furnished with muscular fibres. The hair should be shaved off, and a vein of fair size being selected, the epidermis over it is rubbed thin with a piece of fine sandpaper, great care being taken not to carry this process too far. It is necessary then to wait a little time in order that the slight irritation thus produced may subside. The solution of extract of Calabar bean is then applied over the vein, and contraction follows speedily and in a marked degree. The effect of this agent in causing contraction of veins can also be exhibited to a limited extent, but still distinctly, in the human subject. Under the application of the solution of the extract to a slightly congested conjunctiva, if we closely watch the superficial veins of medium size and running a straight course towards the cornea, we shall convince ourselves that they diminish in calibre *pari passu* with the contraction of the pupil. Very large and tortuous rectal veins are not amenable to this influence.

1 We learn from Mr. Jones that his opinion is in favour of a complete physiological antagonism between Calabar bean and atropine; an antagonism which is much more direct than that between atropine and morphia, which seems largely accidental, while the opposition between atropine and Calabar bean is essential and specific. This idea certainly agrees very well with the results of our own experience. The antagonism between Calabar bean and atropine has been recognized by Dr. Fraser. We may mention that more than three years ago, in a series of experiments on dogs, which were unavoidably broken off sooner than we wished, it was impressed on our mind that these two substances were opposed as regards most, if not all of their actions, and in a toxicological point of view were probably antidotes of each other.—Ed. Pract.

ON THE HERPETIC FORM OF STRUMOUS OPHTHALMIA, AND ITS TREATMENT BY ARSENIC.

BY ROBERT P. OGLESBY,

Assistant Demonstrator of Anatomy in the Leeds School of Medicine.

I STATED (*vide* the *Practitioner* for May, 1869,) that I possessed no record of any case of strumous ophthalmia associated with herpes frontalis. I have now the notes of such cases. For the notes of one case, I am indebted to the kindness of my friend Dr. Allbutt, of Leeds. The other cases came under my own care.

In both these cases of herpes frontalis, the eye suffered, but in neither seriously. In the case under Dr. Allbutt's care, the conjunctiva was very vascular, and the edge of the cornea slightly ulcerated, but there were no symptoms of deep-seated mischief. In the case under my own care, a very deep ulcer of the cornea was the worst symptom. In neither case was the disease of the skin ushered in with any noticeable degree of pain nor was the disappearance of the eruption followed by pain.

In no case of H. labialis have I seen deep-seated inflammation of the eye, although I have carefully examined for any such complication.

In the cases of H. labialis under my care the eruption has not accurately followed the exact distribution of the second division of the fifth. In one or two cases, the vesicles followed the small branches distributed to the side of the nose—but only partially those branches distributed to the upper lip, stopping short in a line with the nostril. In other cases, no vesicles invaded the side of the nose, but closely followed the branches distributed to the upper lip.

I have no record of any case in which the eyelid suffered

from the eruption, or in which the vesicles appeared on the palpebral conjunctiva.

H. labialis associated with strumous ophthalmia in children, generally appears as the sequelæ of some febrile attack—such as scarlet fever or measles, and I have seldom met with it in other than children of a strumous or phthisical diathesis.

In cases where the eruptions has affected both sides of the face, I have found the ophthalmia most intractable, and have noticed the recurrence of the disease in such cases at more frequent intervals than in cases of unilateral H. labialis.

Hitherto I have not obtained beneficial results from the application of local remedies to the eye in these cases; and I would observe that the treatment constitutionally, by means of arsenic, has seldom failed to prove of great value in my hands.

Case I.—Herpes of the left cheek. Minute ulcerations round the edge of left cornea.

Early during the present year, Mrs. K—— consulted me about her child, aged two and a half years. He was a healthy-looking rather stout boy, and had been ailing for ten days. His left cheek was covered with patches of herpes, the vesicles following pretty accurately the peripheral branches of the second division of the fifth. The eyes were shaded from the light by a large piece of green silk, and the child also covered the diseased eye with both hands, and obstinately refused to let me examine it.

On inquiry, I ascertained that the child during infancy had been delicate. He had had a severe attack of measles during the latter part of the past year, which left him weak for some time. There was no history of syphilitic taint, but the joints were enlarged and rickety, and the head ill-shapen and large in proportion to the body. The cervical glands on the right side were swollen. His skin was hot and dry; the tongue coated and white. The bowels acted irregularly, and the fæces were light coloured and offensive. He slept badly, and often awoke crying. He was thirsty, and wishful for cold water.

The vesicles were small and had existed more or less for ten days. There were grouped upon the left cheek and side of nose. The lower eyelid of that side was much swollen, but free from the eruption. The right eye was quite healthy, but suffered

from slight intolerance of light. The left eye I failed to get a glimpse of, but there was intense intolerance of light and much lachrymation.

Arsenic in two-drop doses thrice daily.

When next seen at the expiration of five days, the eruption had begun to fade. The diseased eye was now so tolerant of light, that I was enabled to make a satisfactory examination. The conjunctiva was inflamed, and round the edge of the cornea were several minute ulcers. The skin was less hot, the appetite was good, but the bowels remained obstinate. At the expiration of two weeks, I received word from the parents that the child was convalescent.

Case II.—Herpes confined to left cheek, not affecting side of nose. Ulcer of cornea.

On the 28th day of January, 1869, Mrs. B—— consulted me about her little girl, æt. fourteen months. She gave me the following history:—The child had been delicate since birth. When six months old, it laboured under a smart attack of bronchitis. Four months later, she suffered from measles. There was a phthisical family history. The child was rather stout, had considerable colour in the cheeks, and appeared to be enjoying (excepting the local affection) good health. A few days prior to the appearance of the eruption, she had been extremely fretful, the appetite which had been good became capricious, and she passed restless nights.

There were two patches of herpes: the upper one situate beneath the lower eyelid, the lower one near to the upper lip, though not actually encroaching upon it. The vesicles were unusually small. Simultaneously with the appearance of the eruption, occurred intolerance of light in the left eye, which had steadily increased. There was a central ulcer on the cornea, with but slight conjunctival redness.

Arsenic in increasing doses had a beneficial effect, and at the end of two weeks the patient ceased to attend, being convalescent.

Case III.—Ulcers of cornea. Herpes affecting both sides of the face.

During the latter part of January, 1869, Mrs. J—— attended with her child. The little boy had been healthy for the first

ten months of his life; then, without any apparent cause, became ill and weak, and lost much flesh. He then suffered from diarrhœa. Near Christmas time (1868) he began to shun the light, and complained of pain in the eyes. The right cheek shortly afterwards became red: then the left cheek suffered in the same way. In a short time, the redness was followed by groups of vesicles. He complained of headache and thirst, but his appetite was good, and his bowels acted properly.

Present condition.—The herpetic patches invade both cheeks and sides of nose. The vesicles are large, and, in one patch on the left cheek, confluent. The conjunctiva of the right eye is very vascular, and the cornea ulcerated near to its centre. There is a slight marginal ulcer of the cornea in the left eye, with but slight conjunctival irritation. Intolerance of light is a distressing symptom. The lower lids are swollen. Both pupils are contracted, but the irides are free from disease.

Two drops of arsenic in the form of Fowler's solution to be taken three times a day for one week.

The mother attended again the following week with her boy. The intolerance of light was less marked. The vascularity of the right eye had almost disappeared, but the ulcer appeared a little deeper. The left eye had much improved. The eruption had partially faded on the right cheek, but one or two fresh groups of vesicles had appeared on the left cheek.

Convalescence rapidly ensued, but the mother ceased to attend with the boy before he was quite well.

At the expiration of two months, she again attended with the child, stating that the disease had returned. The boy convalesced rapidly after his last attendance, and remained well for several weeks. He then became fidgety and cross, lost his appetite, and passed restless nights. The eruption was again bi-lateral. The vesicles were small, and chiefly confined to the side of the nose. The old ulcer on the right cornea was not quite healed, but the other textures of the eye were healthy.

Arsenic was again prescribed, but on account of causing violent sickness, was discontinued. The eruption faded at the end of the fourth week. Simultaneously with its disappearance, severe conjunctival irritation occurred in both eyes, which resisted all treatment for a considerable time.

For the notes of the following case I am indebted to the kindness of Dr. Allbutt, of Leeds. I may add, that, unknown to each other, we have been collecting evidence on this subject for some time past. Dr. Allbutt assures me that arsenic as a remedy in these cases has proved of great service in his hands.

Case IV.—Herpes of left side of face and brow. Inflammation of the superficial textures of eye. Absence of neuralgia.

A girl, æt. twelve years, was lately admitted into the Leeds General Infirmary under the care of Dr. Allbutt, suffering from strumous ophthalmia associated with herpes. The eruption followed the course of the branches of both first and second division of the fifth, distributed to the left side of the face and brow. The eye was much injected, and superficially ulcerated. There was total absence of any neuralgic pain.

She was at once placed upon arsenic, and no local applications were ordered. From the establishment of this treatment, the whole side of the face and eye cleared up with remarkable rapidity, and she was soon convalescent.

Case V.—Herpes affecting the right side of face and brow. Deep ulcer of cornea. Absence of neuralgia.

April 26, 1869, Charles William K——, æt. two years, suffers from strumous ophthalmia associated with herpes, of the right side of face and brow. The eruption follows pretty accurately the branches of the first and second division of the fifth: both the side and tip of nose are affected. There is a deep ulcer on the right cornea. There is clear evidence of the absence of any neuralgia, for the child has not been fretful, and appears to enjoy good health; the most prominent symptom being intolerance of light. He convalesced rapidly, after taking arsenic for a short time. The disappearance of the rash was not followed by neuralgia.

Owing to the unusual length of one of the original papers in the present number, the Editor finds it necessary to postpone his intended paper on the Vaccination question till the October number.

Reviews.

A Handbook of Thereapeutics. By Sidney Ringer, M.D., Professor of Thereapeutics in University College; Physician to University College Hospital. London: H. K. Lewis, 1869. Pp. 482. Price $5.25.

Dr. Ringer has undertaken a very proper and necessary work in writing an elementary manual of therapeutics. In the present day, the lecturer on what is called Materia Medica, if he be a person of energy and activity of mind, must be conscious that the only matters connected with remedial agents on which it is the least use to give formal lectures, are the actions which they excite in the body. The physical and botanical properties of drugs, and their pharmaceutical preparation, are things which should be left to the students to get up for themselves with the aid of books and specimens, and under the control of frequent *viva voce* tutorial examinations. The only use of formal lectures is to convey to the minds of the pupils such an outline of the action of remedies as may enable them to follow with intelligence the prescriptions which they will see written for cases of disease in the wards and in the out-patient room. At the same time, as the pupils addressed are (under the present bad educational arrangement) only first year's men, no doubt the information supplied should be simple, and should avoid anything like profound speculation, or references to elaborate chemical or physiological theories. We presume that the work before us is such a text-book as Dr. Ringer would put into the hands of his class; and it was therefore reasonable that in writing it he should avoid committing himself to large schemes of classification, which could only be justified by arguments such as the students would not be qualified to appreciate. It is upon this basis, therefore, that the merits of the work should be judged.

Some classification, however, it is absolutely necessary for every writer on therapeutics to adopt, and Dr. Ringer has selected that of Buchheim as the most appropriate model. We confess that we cannot thoroughly approve the model. The system is too narrow; for although such agents as cold and heat and oxygen are included, there is no systematic treatment of

dietetic agents, no sufficient account of the large and important subject of mineral waters, and nothing respecting the medical uses of electricity in its different forms; although the two first of these subjects are incidentally discussed, in a partial manner, under several different headings. Our own opinion on this matter is decided. We think that even an elementary course of therapeutics should be arranged on a more definite plan than that adopted by Dr. Ringer. In particular we would insist that remedies should first of all be divided into two principal groups —those which act only locally, and those which act upon the organism at large. And under the former heading we believe that it is necessary, if sound preliminary instruction in therapeutics is to be given, to make a leading and principal group of *dietetic* remedies, including the ordinary foods—nitrogenous, hydro-carbons, hydrates of carbon, water, salts—which contribute directly to nutrition, and also the medicines which are chemically and physiologically allied to the substances ordinarily called foods. When the student has received a sound instruction in these matters, the teacher might proceed to deal with the action of such influences as light, heat, cold, baths and electricity.

Not until the whole of the above-mentioned subjects had been discussed would we advise the teacher of therapeutics to introduce his pupils to the far more difficult study of the action of drugs proper; that is, of substances distinctly and powerfully poisonous in their larger doses. For this is quite certain, that if the young medical man carries with him into practice only a sound working knowledge of the physiological relations of the various foods to diseased conditions of the body,—of the nutritive actions of cod-liver oil, iron salts, chloride of sodium, phosphate of lime, fresh vegetable juices, &c.—he will have at least acquired a large amount of positive knowledge for which he will find the most important applications in every-day practice, and *without* which the most copious and accurate acquaintance with the current dogmas about the action of drugs will never enable him to treat disease safely or effectively. We believe we shall not be accused of exaggeration, if we say that it is of more consequence to know when to give beef-tea or milk, rather than solids; when to recommend or to forbid a starchy diet, when to limit or to increase the allowance of fatty food, and when to administer iron tonics, than to know the therapeutic traditions even with regard to such drugs as opium or calomel, or iodide of potassium. Let us by all means teach our pupils how to handle the *harmless* means of treatment which are at our disposal, before we plunge them into the far more intricate study of remedies which may be powerful for good, but which, misused, may do the most serious harm.

We have no wish, however, to dwell on this defect of the book (as we think it), but will proceed to the consideration of some of Dr. Ringer's remarks on special drugs. And at the outset we must call attention to two features of his work, which will undoubtedly attract much attention, and perhaps excite a good deal of opposition. In the first place, we often find the author recommending doses which are very much smaller than those in ordinary use; and secondly, we observe that in certain instances (*e. g.* ipecacuanha) he recommends the smaller doses of a drug for the treatment of symptoms which closely resemble those which the agent can itself excite when given in poisonous quantities. This will probably be styled "homœopathy," by many; indeed we have ourselves heard this remark made; but we would earnestly protest against the justice of such a criticism. Dr. Ringer has raised a most important question, that of the variation in effect which can be produced by diminishing the dose of a drug; but he has not committed himself to any such nonsense as infinitesimal dosage, or as the so-called "law" of similars. In citing the facts which he has observed with regard to the action of very small doses of wine of ipecacuanha in arresting vomiting, he has merely produced an additional piece of evidence—though a very interesting one—of that *tonic* action of this drug upon the nervous system, of which there are plenty of proofs accessible to any one who will use his eyes instead of merely swallowing the dogmas of routinists. It is an amazing thing that the majority of medical men will persist in seeing in ipecacuanha nothing but a depressing emetic or expectorant, though the very circumstance of its cinchonaceous parentage might raise some anticipations of those powerful qualities as a nervine restorative, to which its effects in the treatment of severe tropical dysentery abundantly testify. We think, however, that the author should have brought out one fact more clearly, namely, the extreme variations in individual susceptibility to the drug,—variations which are as remarkable as the analogous differences in regard to susceptibility to alcoholic influence. The same criticism applies to his interesting remarks upon the employment of small doses of arsenic. Dr. Ringer informs us that he has found the use of liquor arsenicalis in one or two drop doses, in various affections of the gastric and intestinal mucous membrane, very useful; and his statements on this point are valuable. But he fails to bring out clearly, what is surely a remarkable feature in the action of arsenic, that its effects upon different individuals vary so widely that the therapeutic dose for one person may be a highly poisonous dose to another, and that (conversely) quantities of arsenic which would produce serious toxic effects in certain constitutions would be harmless or actively beneficial to others. If we may venture to

speculate as to the source of what seems to us a not unimportant omission both in the case of ipecacuanha and of arsenic, we should say that Dr. Ringer has not appreciated the powerfully neurotic influence of these drugs. Even when the tempting and highly suggestive subject of the action of arsenic in asthma presents itself, he merely chronicles the success of the remedy, but neglects a very obvious inference. And we must urge the same objection to his treatment of the therapeutics of nitrate of potash. He satisfactorily disposes of the theory that this drug exerts a defibrinating influence upon the blood in acute rheumatism, and thus proves directly antagonistic to the most disastrous effects of that disease. But he omits all notice of the remarkable influence of nitrate of potash upon the nervous system, which affords at least a very plausible explanatory hypothesis of the relief which it seems to afford to the pain and articular swelling in rheumatism. He does not even mention the very remarkable influence of volatilised nitre in calming the spasm of asthma; a neurotic effect of so powerful and obvious a character as to stamp the drug with unmistakeable nervine qualities.

Such, in kind, are the principal defects of Dr. Ringer's book, to which may be added the less important fault of a too careless style of literary composition, which is to be regretted in the case of a work that must, from its general usefulness, and from the author's reputation and position, become a widely-used class-book. Let us hasten to say, however, that notwithstanding these drawbacks, the work contains a large amount of most useful matter, much of which will be novel to the English student. There is moreover an honest directness of statement, and an apparent desire to balance opposing opinions with candour, which is calculated to attract confidence. We can scarcely doubt that the present edition will be quickly sold, and we trust that the author will immediately commence the work of revising the book with care. In any future issue we think he would do wisely in refusing to allow the mere bugbear of making a large book to hinder him from introducing a careful discussion of such matters as the principles of dietetics in disease, of balneology, of electro-therapeutics, &c. And he should certainly have his proof-sheets carefully revised by some competent friend; for his present volume is an instance of the notorious impossibility of trusting an author to correct his own work for the press. We shall conclude this notice by directing the attention of the reader to some of the more important articles. Digitalis is very well handled, although we think the author accords rather too much importance to the experiments of Dr. Nunneley, which we shall have occasion to criticise in an early number. Upon aconite again, though we cannot but think him unreasonably sanguine, Dr. Ringer makes

important remarks. He has made original researches, also, with Mr. Vickers, upon the action of Lobelia, and of Actæa racemosa, which will be noted with interest. It is a point of considerable consequence, that the latter drug has proved to be of great service in some of the most intractable cases of rheumatoid arthritis. Upon the uterus, Dr. Ringer declares that actæa acts in a manner superior to that of ergot, producing contractions not so continuous, but more powerful and more rhythmical than those evoked by the latter. It thus is less dangerous to the life of the child, and to the soft structures of the mother. Dr. Ringer says also that it can certainly arrest menorrhagia, but he adds that it is inferior to bromide of potassium for this purpose, and we may draw attention to the important statements which the author makes on this latter substance. We presume he must have obtained strong evidence from personal observation, or he would hardly have spoken as unreservedly as he does (at page 74) of the anti-menorrhagic properties of the bromide. He appears to think that it is superior to every other remedy for this purpose.

In conclusion we may mention that though the volume contains no account of the principles of invalid dietetics, there is a very useful appendix in which the modes of preparation of a number of articles of sick diet are clearly and simply described.

The Drift of Modern Medicine. An Address delivered at the Annual Assembly of the British Homœopathic Society, June 30, 1869. By Alfred C. Pope, M.R.C.S., &c., &c. London: H. Turner & Co.

The pamphlet before us is, we confess, selected as a mere peg whereon to hang certain remarks on the present attitude of homœpathic medicine, which we think may not be without interest to the *soi-disant* orthodox section of the medical profession. Not that we undervalue the writer's ability; on the contrary, he appears to us to be a man of respectable intellectual powers; and we trust we may always have grace to abstain from the vulgar custom of assuming that a homæopathist must needs be either a weak-minded or an unprincipled person. What we mean is, that the author of this pamphlet has, in the necessarily brief limits of an orally delivered address, merely touched on points which must be profoundly investigated before long; and has, as we think, quite lost himself, not for want of original ability, but simply from adopting an entirely wrong method of investigation.

Homœopathy is at present, as we have already hinted, in a curious position. Although its adherents are so far faithful to the old traditions of their sect that they still hold the doctrine of

"similars," they have dropped—at least the most advanced and intelligent among them have quite abandoned—the system of giving infinitesimal quantities of drugs, a practice which we need hardly say was quite as fundamental a portion of the true Hahnemannic doctrine as was the "law of similars" itself. Of the Hahnemannic teaching there only now remain, as vital and working elements, (1) the opinion that diseases are to be treated by the use of *small* (*not* infinitesimal) doses of such drugs as, in poisonous quantities, can cause the very diseases themselves; and (2) that over and above the constitutional disturbance which may be present there is, in every case of disease, some local mischief for which a remedy may be found capable of exerting a corresponding local healing action.

Now the position which Mr. Pope assumes throughout his address, and assumes apparently in perfectly good faith, is pretty much this. In the first place, he ignores the revolutionary character of the change in homœopathic practice which is involved in the practical abandonment of infinitesimal dosing. Secondly, he assumes that the orthodox medical profession, as represented by its most advanced and intelligent leaders, is coming round to an acknowledgment of the truth of Hahnemann's law of similars, though it churlishly refuses to allow the merit of discovery where merit is really due. And thirdly, he assumes that the general abandonment of the so-called heroic methods of treatment which were in fashion as late as twenty or thirty years since, is due to the arguments and the successful practice of the homœopathists. We propose briefly to criticise these positions *seriatim;* and it will be convenient to commence with the last.

We have already said that we are not inclined to question either Mr. Pope's ability or his sincerity, but he makes a large demand on our confidence in the latter when he propounds the idea that the changes in medical practice which the last quarter of a century has witnessed are due to the example and precepts of homœopathy. We are not going to deny the possibility that thoughtful medical men may have been helped to a tentative abandonment of bleeding, salivation, &c., in acute inflammations, by the spectacle of patients who recovered from serious illnesses of this kind under the solemn foolery of dosing with globules which were evidently quite inert; but we may safely assert that even this indirect influence would not have been exerted on the minds of the leaders of medical progress had they not been already in a state of active and progressive change, which resulted from perfectly different causes. Whoever will candidly retrace the history of medicine into the last years of the eighteenth century will perceive two influences then at work, in which lay the germ of everything that has given a special character to the altered medical practice of the present day. The powerful

speculative struggles of Brown and of Darwin, and the magnificent burst of John Hunter into the almost untravelled regions of comparative anatomy, made all that has followed an inevitable necessity. Mr. Pope repeats the familiar partisan view, which represents Hahnemann and his followers as the inaugurators of a rational inductive method of medical research; but it argues a scant acquaintance on his part with the history of human thought, or the principles of logic. Hahnemann's method of investigating symptoms, for instance, was the merest *inductio per enumerationem simplicem;* and his famous law of similars, as far as it was original at all, was based on the most egregious metaphysical fallacies, as we shall presently endeavour to show. We are not blaming the homœapathists for having failed in those days to make a right application of the inductive method to medical research, for neither did their orthodox contemporaries do so. But it was and is the just reproach against them that they bore little or no part in the noble and fruitful labours of the great anatomists, physiologists, and chemists, which have subsequently thrown such a flood of light upon the functions of the human body, and the steadily progressive influence of which, in liberalising the intellect of the profession, and freeing it from the fetters of metaphysical speculation, has been so remarkable. The tree is known by its fruits; and it is significant that this latest manifesto of homœopathy expressly adopts and consecrates the hypothesis of a separate vital force, and utterly misreads the drift of the best modern thought on this deepest question of biology. It is amusing enough to see the author who coolly (or perhaps ignorantly) passes by the opinion of such a man as Huxley on such a topic, attempting the ticklish task of defining the nature of Life. The result is such as might be expected. In one paragraph he suggests that "life is that mysterious something which permits of action taking place in an organization." Six lines further on he says: "It is in the power of action possessed by the organization, in which alone life can be said to consist." (The grammar is queer, but let that pass.) Mr. Pope does not see that the two ideas are entirely distinct from each other, and we should say it would be good for his soul if he were put to the penance of reading Aristotle's *De Anima* and *De Generatione*, and thereby get the biological bumptiousness knocked out of him. Poor Béclard, whose definition of life Mr. Pope deprecates, had at least gone through *that* preliminary discipline!

It is a more serious ground of complaint against Mr. Pope, in common with other homœopathic writers of the day, that he ignores the portentious character of the change which has been introduced into homœopathic practice by the tacit abandonment of infinitesimal doses. It is almost more than carelessness of thought which permits him to charge Dr. Ringer, for instance,

with acknowledged appropriation of the discoveries of homœopathists, on the ground of that gentleman's recommendation of drop doses of ipecacuan wine for vomiting, and of similar quantities of liq. arsenicalis for dyspepsia. It may be that hoœopathists, abandoning entirely their original principles, have come to administer these very doses, for these purposes. It *may* also be that neither they nor Dr. Ringer are correct in their observations of the effects of such treatment. But right or wrong, the matter has nothing whatever to do with homœopathy as established by Hahnemann; nor can the practice in question be in any rational manner deduced from the law of similars as understood by that author. It is easy for any moderately intelligent person who enjoys the superior physiological information current at the present day, to put his finger on serious blots in the reasonings of the "orthodox" profession, thirty years ogo, on therapeutics, and to show that on some vital points there has been a great revolution in the principles, even of moderate and safe men, since that time. But it is the strangest delusion to imagine that homœopathy has been steadfast on the Hahnemannic basis; for, in fact, it has been blown about with every wind of doctrine, and now only possesses a precarious vitality by the deliberate sacrifice of that mystical portion of its doctrines—the infinitesimal dosage—which formerly was one of its prime attractions.

In truth, however, it is only when we consider the doctrine of "similars," and observe the devices by which modern homœopathists are fain to satisfy their consciences as to their fidelity to that ancient symbol of their faith, that we can appreciate either the depth of the confusion in which the majority of the sect—the men of ordinary minds—are plunged, or the bitterness of vexation with which the abler members of the party begin to *feel*, rather than to plainly *see*, that the reforms proposed by their founder were either no reforms at all, or were such only by accident. That "like cures like" was, we need hardly say, no invention of Hahnemann's; it was only one of many successive waves of mephitic vapour from the Stygian marsh of ancient metaphysical medicine. That Hahnemann should have thought salvation from the diseased condition in which he found the practical medicine of his day was to be got from such a source of inspiration, is rather sad than strange.

> "The time is out of joint; oh cursed spite
> That I was ever born to set it right!"

would have been an appropriate sentiment upon his lips, as a more honest expression of disgust at the coarse injustice of his orthodox persecutors; but it would have been even more

bitterly true had he uttered it as a death-bed recantation. His was that hardest fate of all which besets a man who has just enough genius to perceive that a revolution is inevitably impending, but lacks the insight to discover the path of safe progress. That he caught glimpses of the absurdity of treating disease as an *entity* is quite certain. But it is equally certain that he was in bondage to a congenital incapacity to distinguish between words and things; or he would have seen that the "likes", and the "unlikes" of the homœopathic and the allopathic heresies, respectively, are such only in name and not in fact. To call mercury a "similar" of syphilis, because both the disease and the drug can produce morbid affections of the mouth and the periosteum, is just as absurd, and is an absurdity of just the same kind, as to say that mercury is an "opposite" of inflammation because it can help the removal of the effused products of one kind of inflammation. The theory was, in each case, a mere "idol of the cave;" the speculator did not truly observe the facts, and make a proper induction, but took note only of such glimmering hallucinations as presented themselves to his own self-limited outlook.

In full agreement with the essentially metaphysical predilections which induced Hahnemann to fight (what he thought) the battle of therapeutic reform upon the basis of a supposed law of similars, are the doctrine of infinitesimal dosage and the still more recondite theory of increased potency from dilution. To any one who is practically familiar with the ordinary "origins of human error," the genesis and embryonic development of these thoughts are clear enough. The philosopher Hahnemann was in a state of violent and not unnatural disgust at the recklessness with which physicians attacked a supposed enemy—disease—without any regard to the safety of the tenement in which it was presumed to have taken up its quarters. To him, thus disgusted, there presented itself the ancient theory of similars, illuminated by the *ignis fatuus* light of a few such facts as the occasional shivering in cinchonism. Doubtless, some twinges of conscience afflicted the derider of hostile morbid entities, as he saw himself in danger of fathering a theory of *friendly medicinal elimination*, a theory of medication by remedies something akin to the kindly social tact by which a gentle-voiced lady extinguishes a well-meaning, loud-tongued, conversational idiot. But instead of being driven by this reflection into the safe path of philosophical induction and verification, he was led by his native and acquired predilections to plunge into a still deeper mystification. The "potencies" which his delirious fancy saw leaping round the pestle which chased the billionth of a grain of arsenic round a twelve-inch mortar, were certainly the merest spectres; but they were the legitimate outcome of a mode of

speculation in which the inquirer determined to settle all pending questions in his own lifetime, or at least to settle all the fundamentals of a system.

How much longer the sect of homœopathists will endure is one of the most difficult and uncertain inquiries possible; and we confess that it does not greatly interest us. The underlying assumption that there are any such remedies as we can reasonably call "similar" or "opposite" to the diseases for which they are used, either by orthodox or by heterodox practitioners, is a naked fallacy; a member of the great society of intellectual begging-letter impostors too well known to the detective police of modern science to be much longer endured. Our whole anxiety at present is that clever men like Mr. Pope may see their way out of the intellectual *impasse* in time to dissociate themselves from luckless companionship before the smell of fire has passed upon their garments.

De l' Application de la Méthode sous-capsulo-periostée à la Resection tibio-Tarsemie. Par le Docteur Amédée Nodet. Paris: Delahaye, 1869.

(*On the Application of the Subcapsular Periosteal Method to the Tibio-tarsal Resection.* By Dr. Nodet, of Lyons. Pamphlet, pp. 79.)

The little *brochure* before us furnishes a good instance, if any were needed, of the interest that attaches to physiological and microscopical inquiries, and of the close relation that exists between scientific observation of healthy processes, and the application of the knowledge so obtained to the treatment of disease, whilst it further gives abundant evidence of the care with which conservative surgery is now pursued, and the advantage that is taken of the least hint afforded by any advance in our knowledge derived from experiment on the lower animals. The great importance of the periosteum in generating new bone has long been known, and most of the large museums, both in this country and abroad, contain preparations made after the fashion of those of Flourens, Stanley, and others, showing the value of the periosteum as a centre from which ossification may proceed. About ten years ago, however, the subject was more systematically investigated by M. Ollier, to whom the general introduction of the mode of operating which is the subject of these remarks is due. In M. Ollier's original investigations, which have recently been published in a collected form, it was shown that in the case of rabbits, and especially of young rabbits, the removal of a strip of periosteum, and its transplantation into another part, led to the formation of a column of bone of corresponding size, and that even a fragment of periosteum of one

animal might be transplanted into any vascular part of another with equal success. These experiments, when reported to the Académie des Sciences, attracted considerable attention, and speedily caused efforts to be made to save the periosteum in operations and in accidents occurring in the human subject where previously it would have been removed. Thus Langenbeck preserved it in a case where the removal of a portion of the tiba and fibula from gun-shot injury was requisite; Ollier himself had previously removed the upper part of the shaft of of the humerus, when also the periosteum was preserved with the best success, the shortening only amounting to about half an inch, a matter of small importance where the upper limb is concerned. After various other cases had shown the value of the method, M. Ollier applied it in a case where it was requisite to resect the tibio-tarsal articulation, also with good results, and he has subsequently operated three times; but M. Langenbeck appears to have practised it most extensively, since he has had no less than eleven cases.

M. Nodet approves of the method of operating adopted by M. Ollier, of which the following constitute the essential features. First, the integuments and periosteal tissues are divided on one or both sides, according to whether one or both bones are to be resected; the incision commencing about three inches above the malleolus, and terminating just below it. The periosteum is now detached from the malleolus with a peculiar instrument invented by M. Ollier, termed a *détache-tendon*, a small incision being made perpendicular to the first, both above and below, to allow this to be accomplished; a curved instrument containing a chain saw is then passed round the tibia beneath the periosteum, and the requisite section is effected. The fragment is seized by lion forceps, and the posterior part, which was not previously accessible to the instrument, is carefully detached from the periosteum. The same proceeding is to be adopted for the fibula.

Button-holes made in the membrane in the act of detachment are of little consequence, but it is better to remove a fragment of bone than to leave a portion of the periosteum; and when such pieces have been removed, it is better to allow them to remain than to attempt to pick them of, as, if not separated by suppuration, they are very useful in forming centres for the development of fresh bone. The principal contra-indications, as tubercular deposits, very extensive disease, age, &c., we need hardly stop to mention here, as they are common to this operation and all modifications of resection; but we would just observe that erysipelas seems to constitute a somewhat frequent and very unpleasant complication, and that hence unusual care should be taken to place the patient under the most favourable

hygienic conditions. Now, in comparing the new operation with the old, it is unquestionably true that the ordinary mode of resection presents, as M. Nodet remarks, many desiderata. It often leaves the patient in a state in which he is incapable of walking, on account of the imperfect coalescence that has taken place between the cut surfaces. The wound is large, and the danger of wounding vessels considerable; but with the new operation the occurrence of ossification is far more certain: the incisions implicate only the skin and the periosteum, and the more superficially situated structures, bones, vessels, tendons, &c., are interfered with to much less extent. Moreover, the wound is much smaller, and the occurrence of large openings, from which purulent discharges take place, are much more rare, whilst at the same time the shock to the system is much less.

Again, even if complete ossification do not take place, the ligaments being preserved *in situ* admit of a new articulation being formed, while they materially assist in strengthening, permitting, whilst they limit, movements of flexion and extension that are very favourable to locomotion. Lastly, in young subjects it is not necessary to divide the bones at the same level. Hence this mode of operation gives greater latitude to the surgeon. He can remove all the diseased, and he need remove none but the diseased parts. Hence when the fibula is sound it should be preserved. If, however, the subject is over twenty-five years of age, and it has been necessary to remove much of the tibia, the fibula should also be resected at the same level. Such are some of the principal advantages claimed by M. Nodet for the subperiosteal mode of operating. On the whole we think he has brought together in his pamphlet an amount of evidence in favour of the new operation which will lead to its being adopted in this country.

Clinic of the Month.

Angina Pectoris relieved by Nitrate of Amyl.—A case under the care of Dr. Leishman, reported by Mr. Tracy, presented the usual symptoms of this disease in a very severe form. Soon after admission an attack came on; he was ordered twenty drops of chlorodyne and a turpentine stupe over the chest. No relief being obtained, he was ordered to have every morning one drachm of sulphuric ether and one drachm of compound tincture of camphor, with a little water, and a tablespoonful of whisky every half-hour. Temporary relief followed, but on the following day the spasm returning, five minims of the nitrate of amyl were dropped on a handkerchief and inhaled; almost instant relief was obtained, and the patient expressed himself astonished and very thankful. In about a quarter of an hour the pain returned; the inhalation was repeated, and again with instant relief. In half an hour the patient was suddenly seized with violent and excruciating suffering, which was once more instantly relieved by the inhalation. This patient subsequently died, and the aorta was found dilated and atheromatous, in parts presenting distinct spicula of bone. (See *Glasgow Med. Journ.* Aug. 1869.)

Electricity as an Anæsthetic in Dental Extraction.—An interesting paper has been read on this subject by Mr. Snape before the Odontological Society. He employs Davies and Kidders' patent American electro-magnetic machine, which is placed in one room, and kept in operation by a servant, whilst the wires are brought into the operating room to the operating chair, the extremities of the arms of which are covered with thin metal plates, and a copper wire attached to each of these plates "runs round the chair, to which one of the conductors from the electrical machine is attached, while the other joins on to a flexible metal cord, which during the operation is fastened to the forceps." This last must, of course, be isolated when the patient has taken his seat and his head is properly adjusted; "his hands are placed upon the metal plates which cover the arms of the chair. The forceps being firmly applied, that moment the circuit is completed, and the tooth should be removed as quickly as possible, but without *hurry*." The forceps must be covered, except at their points, with shellac, to prevent the escape of electricity from their sur-

face. Mr. Snape states he is generally, but not always, very successful, little or no pain being experienced even by those who were perfectly unconscious that electricity was being employed. (See *Trans. Odontological Society of Great Britain*, June, 1869.)

Strychnia in Epilepsy.—Mr. Tyrrell, of Great Malvern, calls attention to the value of this remedy in epilepsy, especially in those forms in which anæmia and defective nervous control are prominent symptoms. The majority of such patients are women, and the attack often supervenes with more frequency and severity near a catamenial epoch. Mr. Tyrrel considers that small doses are preferable to large. (See *Brit. Med. Journ.* Aug. 7, 1869.)

The Waters of Carlsbad.—Dr. M'Call Anderson, who has lately visited Carlsbad, speaks highly of it as a watering-place. The springs are very abundant and of alkali-saline constitution, containing much sulphate and carbonate of soda and chloride of sodium. Their temperature ranges from 116° to 165° Fahr. They are not purgative nor even aperient in their action, but they are useful in all cases of abdominal plethora, in chronic catarrh of the stomach and intestines, in which diarrhœa is produced from the slightest causes. But their chief value is in chronic affections of the *liver*, in cases of gall-stones, and in the early stage of cirrhosis. Hence most cases of jaundice due to removable causes are readily cured. Patients laboring under *diabetes* are often greatly benefited by their use, and they are stated by Dr. Seegen to be very serviceable in cases of *gravel*, and in *gouty subjects*. (See *Glasgow Med. Journ.* Aug. 1869.)

Sambucus Canadensis. A New Remedy in Albuminuria.—Dr. M'Nutt gives the details of three cases of albuminuria, one in an old lady of 75, suffering from chronic Bright's disease; a second of a child aged 7, where the albuminuria was probably due to exposure to cold, as she had rheumatic pains; and a third, occurring after scarlet fever. In all these cases a cure was effected by employing an infusion in hard cider of the scraped inner bark of the elder. The only question here is whether the acid cider is not the active agent. (See *Hay's Amer. Journ. of Med. Science*, July, 1869.)

Treatment of Lupus Erythematosus.—The scales, according to Dr. Geddings, should be removed by the application of strips of linen soaked in oil, and kept in position by a flannel roller. Then the diseased part may be rubbed with a good lather of potash soap on flannel. If this fail, strong liq. ammoniæ or liq. potassæ may be applied with a pencil made of picked lint, or a solution of iodine in glycerine—℞ Iodinii ℈j, glycerini ʒj, potass. iodid. ʒ ss; or Rochard's ointment, which is composed

of calomel gr. xx., iodinii gr. viij., melted together with the aid of a gentle heat, and triturated with ʒ ij of conium ointment. Carbolic acid has been applied with varying success, sometimes effecting a brilliant cure, Arsenic, mercury, and cod-liver oil are generally without influence on the disease. (See *Amer. Journ. of Med. Science*, July 1869.)

Treatment of Acute Rheumatism by Bromide of Ammonium.—In the reports of the Pennsylvania Hospital, Dr. J. M. Da Costa gives the results of a series of thirty cases treated with this remedy, administered in fifteen or twenty grain doses every third hour, well diluted, and omitted at night. No other remedy was used except for quite temporary indications. The mean duration of the attack was 22·5 days; of the attack prior to admission, 8 days; of treatment in the hospital, 14·16 days. The effects observed were that the pulse became slower and somewhat weaker, and the temperature was a little less than the average degree in the disease. The influence on the pain was marked and beneficial. The urine remained acid in most cases, and its quantity was increased; the urates and chlorides were copious, the phosphates variable. Diarrhœa was rare. In 23 out of the 30 cases there were no cardiac complications. Dr. Da Costa is very favourably impressed with the utility of the remedy. As regards its effects on the frequency of cardiac complication it scarcely seems to be of equal value with the alkaline treatment. (See *Hay's Journal of Med. Science*, July 1869.)

A New Surgical Dressing.—Dr. D. Agnew employs a form of paper manufactured in Lambertville, New Jersey, from coloured rags decolorized by chloride of lime. It possesses the advantages of being cheap, highly absorbent, and acting like oiled silk, having one of its surfaces water-tight. (*Ibid.*)

Treatment of Paralysis by Electricity.—In an interesting paper on this subject by Dr. W. G. Smith, details are given of the treatment by electricity of cases of facial palsy, of paralysis from the poison of lead, of paralysis from local injury or pressure, whether it be on the bone or directly on the muscle, and of rheumatic paralysis of the limbs. And he sums up the general principles of muscular faradisation as follows:—1. The current should be directed *locally* to the diseased part. 2. The fact of no visible contractions being at once obtained does not warrant us in neglecting to proceed with the electric treatment. 3. Indirect faradisation (*i.e.* when one electrode is placed over the trunk of the nerve) is generally preferable to direct faradisation (*i.e.* when both poles are placed upon the muscle.) 4.

The use of painful currents is to be discountenanced, and in no case should a feeling of fatigue be induced in the muscles. 5. The difference in the effect of the same electrical stimulus on different muscles is not due to any inherent variations in their electrical susceptibility, but simply to physical and anatomical considerations. 6. In order to lessen the resistance of the epidermis as much as possible, the skin underneath the electrodes should be kept wet with warm salt water. Lastly, to produce contraction of *individual* muscles, the small pointed electrode should be connected with the cathode or negative pole of the apparatus, and be placed firmly on the skin at the "motor" points or "points of election" (*i.e.* the points of entrance of the moto nerves into the muscles). Dr. Smith further observes that whilst admitting the use of an interrupted *galvanic current* (from a constant battery)—*i.e.* galvanisation is necessary in some cases where faradisation fails to elicit contraction in the paralysed muscles—in the majority of cases the most suitable form of electricity is the primary current (*i.e.* the current from the inner or thick and shorter spiral of an *induction* machine), applied locally by means of pointed conductors tipped with moist leather, by direct or indirect faradisation. The secondary current (*i.e* the current from the outer or finer and longer spiral) causes much more pain on account of the greater intensity of the current, and the skin of the face, especially in the middle line, is accutely sensitive to electric stimulation. Stimulation of muscles which have regained their proper contractility should be avoided.

Treatment of Chronic Cases of Sore Throat by nitric Acid.—Dr. Macintosh, remarking on the frequency of sore throat in the spring and autumn, especially in low marshy districts, states he was led to try the effects of nitric acid, of its commercial strength, in those cases which are accompanied by enlarged tonsils, dotted over with white specks, and elongated and relaxed uvula, and also in the foul ulcers of scarlatina and didtheria. The remedy should be applied with a camel-hair brush, a glass of water or alkaline solution being at hand to gargle the mouth with afterwards. The tongue should be well depressed, and a deep inspiration previously taken to obviate any ill effects from the process. The application may be made once or twice daily. (See *Med. Times and Gazette*, August 1869.)

The Climate of Madeira.—Dr. Ireland, in speaking of the climate of Maderia, makes the following observations:—A very large proportion of cases coming to Madeira are phthisical, nevertheless such are not the cases likely to do the climate most

credit. Among those suited for its soft and equable air are inflammatory diseases of the larynx and trachea, where relaxation is not a prominent symptom, chronic bronchitis, slow recoveries from pneumonia, cirrhosis, and gangrene of the lungs. Some celebrated Madeira cures have been cases of these two last complaints. Scrofula and rheumatism may not be expected to do well; and the habit of persuading patients returning to England from the coast of Africa with intermittent or remittent fevers, dysentery, and worst of all liver disease, to land and stay at Funchal, is most objectionable. Such cases do best in England. In Madeira they fall back or make slow recoveries.

On the Use of the Bromides in Epilepsy.—A short paper appears on this subject by Mr. W. B. Kesteven, who has employed the bromides not only in epilepsy, but in laryngismus, convulsions, chorea, and certain nervous headaches in melancholia and acute mania. Dr. Kesteven remarks that the doses mentioned in works on therapeutics are usually much too small, the proper amount being from 15 to 50 grains, which may be continued for a considerable period, and which are never followed by any injurious effects, unless a certain degree of drowsiness be so considered. Dr. Kesteven gives the details of various cases, and concludes with the following propositions:— 1. That by reason of their possessing a special influence on nerve tissues, and upon the vaso-motor nerves, whereby they prevent sudden arterial action, we have in the bromides most valuable remedies for certain affections of the nervous system. 2. That in order to obtain their full therapeutic powers the bromides must be given in large doses, and their use prolonged. 3. That where these medicines are not efficacious to work a cure, their influence is sufficient to diminish the severity and prolong the intervals of epileptic seizures. (See *Journal of Mental Science*, July, 1869.)

On the Method of observing the Temperature of the Body.—In this essay Dr. Bæumler, after referring to the statements made in Dr. Aitkins' work, to the effect that in estimating the temperature of the body the thermometer should be allowed to remain in the axilla "not less than three minutes," or when extreme accuracy is required, for five minutes, takes occasion to point out that even these limits are insufficient, and gives a series of experiments in which it is shown that it may continue to rise long after these periods, and he sums up with the following important statement that the time required for a thermometrical observation varies as to the locality in which the temperature is taken. This time is from three to six minutes in the rectum; from nine to eleven minutes for the mouth; and from eleven to twenty-four minutes under the tongue for the axilla (extreme

cases excepted). He admits, however, that the time may be somewhat shortened by keeping the arms closed by the side for a quarter of an hour previously, and by warming the bulb of the thermometer to near the point required to be estimated.

Abdominal Puncture in Tympanitis.—Dr. Davey gives an account of a case under the above heading which opens up an interesting question, whether when the peritoneal cavity is distended with air it should be treated as in dropsy, and be allowed to escape by a puncture. We think with Dr. Davey that an affirmative answer may be given. Dr. Davey refers to a successful case that occurred in France in which six punctures were successively made with the result of saving the life of the patient, and it appears to be a common procedure with veterinary surgeons in the case of cows, which are frequently thus affected—a penknife or trocar being introduced between the last rib and the ilium. In Dr. Davey's case, though great relief followed the exit of much fœtid gas, the little patient died in consequence of peritonitis. The peritonitis, however, was not occasioned by the puncture, but by ulceration of the intestines and escape of their contents into the peritoneal cavity. (See *British Medical Journal*, August 21.)

Strychnia in Chorea.—A good report of a case under the care of Dr. Murchison is given by Mr. Bale, showing the beneficial results that may sometimes be obtained from the use of strychnia in this disease. The girl was fifteen years of age, and her left side was primarily affected. There was no history of rheumatic fever; she was placed on ten grains of bromide of potassium three times a day, but in spite of this the right side rapidly became as bad as the left. She became stupid and heavy, and was unable to sleep from the violence of the movements. Sulphate of zinc was given in doses of two grains three times a day without effect. She became worse, when six minims of liq. strychniæ in water were ordered to be taken every four hours, and two drachms of brandy every two hours. Improvement was immediately apparent after two or three doses. The quantity was gradually increased to ten minims every four hours, and in the course of a little more than two months the girl was discharged cured. (Ibid.)

Quinine in Pemphigus.—V. Dieren reports the very unusual occurrence of pemphigus without syphilitic complication. The vesicles made their appearance with sharp febrile symptoms of a quotidian type, the intermissions being very complete. The case was completely cured by quinine in a short space of time.

Treatment of Diabetes Mellitus with Opium.—A case under Dr. Stedman is reported, in which the symptoms of diabetes being well marked the patient was ordered five minims of tincture of opium three times a day, with (as diet) two eggs, two ounces of brandy, two pints of milk, ten ounces of meat, and some bran bread, made from bran soaked in successive portions of milk. The quantity of urine gradually diminished; when, having fallen from sixteen pints to six, a small portion of plum-pudding was eaten on Christmas-day, and on the following day the quantity had run up to eleven pints. He was now ordered infusion of gentian and nitro-muriatic acid; when it fell to seven pints again, and he then commenced the use of opium in the form of pills containing $1\frac{1}{2}$ grain, on which it steadily fell to and remained at $5\frac{1}{2}$ pints per diem. (See *Lancet*, August 21.)

Successful Treatment of Epilepsy with Asafœtida.—In this case, which was under the care of Dr. Pollock, the attacks were violent, and had been gradually increasing in frequency and severity for ten years. Bromide of potassium was first employed, but failing, sulphate of zinc, quinine, and iron were successfully substituted. At length half a drachm of tincture of asafœtida with three grains of carbonate of ammonia was given three times a day with the most satisfactory result. (*Ibid.*)

Extracts from British and Foreign Journals.

Therapeutical Action of the Iodides of Potassium and Sodium.—M. Rabuteau has lately made some experiments on the iodides of these alkalies which have a direct therapeutical bearing. He dieted himself for the space of a month, as far as possible, upon the same kind and quantity of food, and found that he eliminated from 325 to 372 grains of urea daily. He then took 15½ grains of iodide of potassium daily, and found that the quantity of urea daily excreted fell to between 201 and 294 grains. And a similar result was obtained with the iodide of sodium; the diet in both instances continuing unchanged. The absolute quantity of urine discharged was not increased unless, owing to dryness of the throat, more water was ingested. Now, since arsenic taken in small doses occasions the same changes in the urine, and both this and the iodides cause an increase of the appetite and a tendency to the deposit of fat in the body, M. Rabuteau proposes that they should be employed in combination where no counter-indication exists, as remedial means, especially in phthisis, in intermittent fevers, and articular rheumatism, whilst they may also be combined with well-known specifics, as quinine, &c. In gout iodide of potassium in large doses is of value on account of its solvent powers on uric acid. (*Centralblatt*, 29 Mai.)

Action of Salts of Selenium and Tellurium.—M. Rabuteau has also recently investigated the action of the oxygenated compounds of selenium and tellurium. Both appear to be very poisonous. The injection of a solution of seleniate of soda or potash into the veins of a dog caused it to be surrounded by an atmosphere of insufferably mephitic odour, the acid being apparently reduced to the condition of selenuretted hydrogen in the body; vomiting and diarrhœa were at the same time induced. It seemed also to have a specific action on the heart, causing it to beat with great feebleness. This last effect was, however, absent when seleniate of soda was employed, the frequency of the pulse and respiration augmenting, whilst on the other hand the action of the poison seemed to concentrate itself on the intestines. After death extensive ecchymoses were found in the mucous membrane of the large intestine. Death

occurred within five days. It was noticed that the heart of the animal continued to beat for three-quarters of an hour after death, and when the temperature had sunk to 77° Fahr. The salts of tellurium quickly induced vomiting, frightful dyspnœa, and anæthesia, and death occurred in a few hours. On examination, the whole of the large intestine was found congested and ecchymosed, as were also the liver, spleen, lungs, and kidneys, the latter appearing quite black. The right ventricle was filled with blood, in which numerous prismatic crystals were noticed.

New Mode of preparing Medicines for the Army or Navy.–Dr. Almén, of Upsala, recommends, in order to save space, that various remedies should be prepared for the above services in the form of gelatine leaves or lozenges. The gum, whilst warm, should have a little glycerine added to it, to prevent its becoming hard. The remedy required is then mingled carefully with it, and the whole poured on a flat table, and when cool divided into masses of equal size. This mode of preparation has the advantage that it preserves the drugs to a considerable extent from the injurious effects of external agents, and checks, or altogether prevents, internal changes. (*Centralblatt*, 19 Juni.)

Experimental Study of the Physiological Effects of Conicine.—In a very long essay on this subject giving the results of a large number of experiments, M. Casaubon states that the active principle of conium is a liquid alkaloid termed conicine, which is chiefly contained in the seeds. Its action is that of a poison paralysing the nervo-moter system. It effects a certain alteration in the blood, which circulating through the body produces different results according to the quantity absorbed. It either increases or produces no alteration on the proper muscular irritability, and it diminishes, if it does not altogether abolish, the motor force transmitted by the motor nerves. In small doses conicine disturbs the function of the various organs, but when taken in poisonous doses, it suspends them after having modified the gasses of the blood. When slowly consumed it alters the tissues. Locally applied conicine produces anæsthesia of the peripheric extremities of the sensory nerves. In poisonous doses it first produces peripheric hyperæsthesia by exalting the excitability of the spinal cord and ends by suspending the functions of the sensory nerves. The exaltation of the functions of the spinal cord, which is only transitory is a consequence in the first place of its diminishing the supply of blood to the organ, and subsequently of its reducing the amount of oxygen conveyed by the blood. Conicine, moreever, produces sighing and sleepiness, which are referable to the causes just mentioned, but in particular to the direct action of the poison on the medulla oblongata. In regard to the extremi-

ties of the ganglionic nerves, distributed to the contractile fasciculi of the vessels, and the smooth organic fibres, conicine produces first an exalted action in them, owing to excess of carbonic acid in the blood, and secondly a diminution of action, owing to the want of oxygen in the blood.

In small doses, therefore, it produces contraction of the smaller arterial branches, but has no marked effect on the pulse in the radial artery; in poisonous doses it produces relaxation of the vascular walls, the pulse becoming soft and compressible. In small doses conicine augments the vigour of the cardiac contractions, and perhaps retards them; but when poisonous doses are taken after primarily augmenting their force, it accelerates them, and finally renders them intermittent, irregular, and slow. In accordance with this action on the circulation the temperature of the body is first augmented and then depressed. Conicine modifies the gases of the blood by volatilizing in them, as a result of which oxygen is not absorbed as before, whilst carbonic acid accumulates. Applied locally in small quantities, conicine diminishes the secretions of the eye, but has no effect upon the pupil; in larger doses, however, it appears to dilate the pupil and to diminish, after having previously augmented temporarily, the secretions of the eye. Besides other effects, it diminishes the accommodative power of the eye. In poisonous doses conicine augments the salivary secretion, and in the first period produces a similar effect on the renal secretion. Its action on the Kidneys and liver, however, requires further investigation. It is to be noticed that the activity of the plant is very much dependent on the climate of the place where it is grown, so that whilst English grown conium is so feeble that it has scarcely any action, and that grown in the Crimea possesses so little activity that the peasants eat it, it is so active in the Isle of Ceos that in view of its immediate and rapid action, all who have attained the age of sixty are poisoned with it in order that food may be left for the remainder of the population. About 4 milligrammes (or ·15 grain) of conicine are sufficient to kill a frog, and according to Orfila 10 or 12 drops prove fatal to a large dog.

The Action of Papaverine in Mental Diseases.—Dr. Stark, Director of an asylum at Kennenburg, takes up this subject in consequence of the researches of Leidesdorf and Bresslauer which were mentioned some time since, in the *Practitioner*. He employed the papaverine of Merk, obtained directly from the laboratory of that chemist. He comes to the conclusion that Leidesdorf and Bresslauer were justified in the opinion that the nutrition of insane patients is increased in consequence of the greater amount of quiet and of sleep which

they enjoy. It seems evident that papaverine is an efficient and a trustworthy hypnotic in many cases of insanity. In eight out of twelve cases on which Stark experimented the desired sleep and tranquility were more or less distinctly produced. There were great variations in the time intervening between the administration and the operation of the drug. The average of Stark's experience gave about six or seven hours as the interval before active operation, but this is liable to very large variations. As the effect of the drug is slow in coming on, so it appears to extend over a longer period; thus, it is common for the patient to feel sleepy on the day after the dose, and to sleep equally well the second night as the first. In several cases the impression produced on the observer was that papaverine by no means acted so *directly* hypnotically as large doses of opium or morphia, but rather removed the obstacles to sleep. Papaverine produces a very distinct impression on the pulse, in many cases slowing it considerably. It appeared to have a more distinctly quieting and soporific effect in maniacal than in melancholic cases. In nearly all cases in which papaverine produces sleep and quiet it strongly contracted the pupil; but the latter effect was never observed in any case in which the other effects of papaverine failed to be produced; and in no case was there only myosis and slowing of pulse without sleep. It appears as if there were a certain casual connexion between the hypnotic effects and the slowing of the pulse; and Stark cannot avoid the suspicion that papaverine exerts a paralysing influence upon the cilio-spinal and vaso-motor nerve-centres. Whether there be any connexion between this influence and the production of sleep, he cannot at present decide. Stark confirms the statement of Leidesdorf and Bresslauer, that papaverine never causes excitement nor constipation. In very large doses it seemed to produce nausea and sickness. It is only very rarely, and after a prolonged employment of the drug, that papaverine loses its effects upon the system. (*Allgem. Zeitsch. f. Psychiatrie*, xxvi. 1 and 2.)

Another and more elaborate research on the action of papaverine has been made by M. Woldemar Baxt, of St. Petersburg. The author reconsiders the whole subject of the action of the various opium alkaloids. He comes to the following conclusions:—1. The whole group of opium alkaloids taken together constitute a series of agents with two specially characteristic actions—*narcotic* and *tetanically convulsive*. 2. Each individual alkaloid possesses one or the other of these characteristic effects exclusively, or else a blending of the two opposed actions, in consequence of which the one or the other becomes prominent, while the other

is more feebly pronounced. 3. The first place as a pure *narcotic* must be given to papaverine. It is followed by morphia, narceia, codeia, &c., with constant diminution of the narcotic character of the influence, and continually increasing convulsive tendencies, which, in thebain, reach the level of complete tetanus, indistinguishable from that produced by strychnia, except by the size of the dose required. 4. Thebain holds the highest place as a convulsive, and following it in diminishing order come porphyroxin, narcotine, codeia, &c., with gradual loss of convulsive and gain of narcotic power. 5. Thebain is quite similar in its action to strychnia; and as larger doses are required, it may be that we shall come to employ it in the cases where strychnia is now used, on account of its less dangerous qualities. 6. Papaverine, while producing the same effects as morphia, has the preference over the latter in cases where the latter cannot be used on account of its unpleasant after-results, none of which can follow papaverine. 7. Papaverine and morphia, acting quite oppositely to strychnia and thebain, may be employed with advantage in cases of poisoning with the latter substances. 8. Papaverine and morphia act first on the peripheral ends of the sensory nerves; they can therefore be employed as local anæsthetics in neuralgia, and in various neuralgias without central lesion. 9. The muscles and the motor nerves suffer no change in function from the action, either of paraverine or morphia. 10. Papaverine and morphia especially diminish reflex excitability, for they first affect the peripheral ends of the sensory nerves, and partly, also, perhaps the sensitive fibres in their course, and probably also the central brain elements. 11. Autochthonous reflex inhibition centres are not affected recognisably by either papaverine or morphia. (*Archiv. f. Anatomie u. Physiol. Reichert u. Dubois-Reymond*, 2, 1869.)

Curara in Tetanus.—In the *Union Médicale*, 75, 1869, will be found a very interesting summary of fresh cases of this kind. It brings together a good many cases which we had not hitherto noticed. The first is a case of so-called idiopathic (*i.e.* unexplained) tetanus under the care of Signor Capozzi. The curara was injected subcutaneously; about $\frac{1}{8}$ grain was at first injected; this was increased to $\frac{1}{2}$ grain twice a day. The expenditure of about 5 grains of extract completed the cure. A second case, under the care of Dr. Morra, was treated with injection of ^{1} grain of curara; fifteen days sufficed for cure. A third case was treated by Dr. Nobis: about 12 grains, subcutaneously injected in small doses, completed the cure. Dr. Gherini treated the fourth case, which was traumatic: 64 injections, varying from $\frac{1}{6}$ to $\frac{1}{2}$ grain of curara, quite cured the

patient. [Curara, Calabar bean, and nicotine, subcutaneously injected, seem the three really hopeful means of combating tetanus.—Ed. Practitioner.]

Creeping Paralysis, of Syphilitic Origin, cured by Anti-syphilitic Treatment.—One more instance of the fruitful consequences of intelligent diagnosis is afforded by the record of a case treated by M. O. Bayer. The patient had suffered for about four years from constitutional syphilis, easily checked by appropriate treatment. The cure was commenced by inunctions of mercurial ointment, followed by large doses of iodide of potassium, which produced great effect; faradisation of the affected muscles and subsequent tonics completed the cure. A syphilitic tumour of the scalp disappeared *pari passu* with the subsidence of the paralytic symptom. (*Union Médicale*, 75, 1869.)

Immense Dose of Croton Oil taken without fatal Effect.—Nearly 47 minims of croton oil were taken by mistake by a child of six years old. The girl complained of the disgusting taste, and the heat of throat which followed it. Soon afterwards there was great pain at the epigastrium, and violent vomiting for three-quarters of an hour. The child then slept for four hours, and on waking asked for food! Soup was given to her; she felt no more pain, although she passed two abundant liquid stools. No irritative symptoms were to be found on the day following. It appears that the oil (which was very good) must have failed to produce more severe effects in consequence of the abundant vomiting. (*Gaz. des Hôpitaux*, 74, 1869.)

Poisoning by Phosphorous successfully treated with Turpentine.—Dr. Sorbets, of Aire (Landes), reports a very interesting case which goes to confirm what has already appeared on this subject. A woman picked up some pieces of lard which her husband had laid as baits for rats (having placed a head of a lucifer-match to each), and added them as thickening to some soup for the evening meal of the family. Symptoms of poisoning presented themselves in three persons who ate the soup. Dr. Sorbets prescribed for each person about 2 drachms and a quarter of turpentine in 13 ounces of mucilaginous mixture: to be taken in 4 doses, a dose every quarter of an hour. The prompt administration of the antidote prevented the occurrence of any very serious symptoms in these cases. The patients suffered from rather severe pains in the belly; they held their hands to the pit of the stomach, and felt much tenderness on pressure in this part; there was a bitter taste in the mouth, and an alliaceous odour in the breath. The father only felt a distinct inclination to vomit. No graver symptoms occurred. There were neither vomiting nor prostration, no

convulsions, and no urgent thirst; the pulse was not more than 88 in the father, 84 in the son, and 80 in the mother. It is evident that the early administration of the antidote prevented what would otherwise have been the very serious toxic results of the phosphorus. (*Gaz. des Hôp.* 65, 1869.)

Bromide of Potassium and its occasicnal Toxic Effects.—During the last week our attention has again been drawn to the powerful effects which bromide of potassium occasionally produces in destroying the faculty of memory. This effect is one of the most singular things known in the whole range of toxicology. It is most formidable *in appearance*, more than one patient under our care having appeared, for a time, almost idiotically forgetful. Yet this symptom *always promptly disappears on the discontinuance of the drug*, as do also sundry symptoms of spinal paralysis, noted especially by Dr. Hammond, of America, and in a few instances by ourselves. Let us take the opportunity to state here that we have never seen any of the *serious* symptoms connected with the heart which have been attributed by some persons to bromide of potassium. We suspect that where they have occurred these symptoms are due to some impurity of the salt employed. As we have said elsewhere, an independent analysis of the commercial specimens of the bromide is very desirable.

Treatment of Elephantiasis Arabum by Ligature of Vessels.—Dr. G. Fischer collects twenty-one cases in which this treatment was adopted. In four cases the external iliac was tied; in fourteen the femoral (in one of these cases both femorals); in one the tibialis antica; and in one case the two common carotids. There were eleven cures (but only four of these persisted for a year or more); two were improved; seven were failures, in one of which digital compression ultimately proved successful. Of the complete failures there was one with no result, three with relapses, one case of gangrene, and two cases (both fatal) of pyæmia. Fischer explains the therapeutic effect of the ligature by its removal of arterial pressure; it is this pressure which prevents the absorption of effused matters, and keeps up the swelling, and its removal allows the natural curative processes to come into play. How rapidly these may effect a cure was shown by cases in which a diminution of 8, 10 and 13 centimetres in the size of the swellings was observed by the fifth day after ligature. Fischer thinks that the first hopes excited by the ligature treatment were excessive, and that it is attended with greater dangers than was then supposed. For anæmic, cachectic patients, it is best to try methodical compression first. (*Virchow's Arch. Centralblatt*, 17 Juli.)

Treatment of Ophthalmia Neonatorum.—Mr. Soelberg Wells observes in a lecture delivered at Moorfields, that the first indication is cleanliness; the infant's eyes should be washed immediately after birth, and the greatest care be taken that the same sponges, clothes, and water are not used for the mother and child. In the early stages he recommends a solution of alum or sulphate of zinc containing one or two grains to the ounce, when more advanced a solution containing two grains of sulphate of zinc and four of alum, and once a day, after washing, a drop of a four to ten grain solution of nitrate of silver, or the direct application of the mitigated nitrate of silver. When much swelling is present, free but superficial scarification may be practised, and cold compresses applied; when the cornea is cloudy, a solution of atropine should be instilled; and when an ulcer threatens to penetrate, the cornea should be pricked by a needle to evacuate the aqueous humour. If there be prolapsus of the iris, the portion prolapsed should be first pricked and then snipped. If the ulceration be very large, with the lens presenting beneath the cornea, an incision should be made and a compress applied. (*Lancet*, Aug. 21.)

Oil of Turpentine as an Antidote to Phospohrus.—M. Audant relates the case of a woman who broke off the heads of a dozen lucifer matches, poured hot water on them, and drank the fluid. An hour afterwards the breath had the characteristic odour of phosphorus; she complained of pain in the belly, stiffness of the joints, &c. She was ordered thirty drops of oil of turpentine in an emulsion of quina every quarter of an hour, to be repeated four times. In the course of two hours improvement occurred; two or three drachms of magnesia were then administered to procure action of the bowels, and the following day the turpentine emulsion was repeated in similar doses. Two months after slight and occasional gastric disturbance was the only remaining symptom. (*Bull. Gén. de Thérap*, 1869, p. 273.)

On Albumen in the Urine.—Mr. Henry Lee calls attention to the occurrence of this system in various conditions in which no evidence can be obtained of disease of the kidneys. In some instances this results from disease of the bladder or prostrate. He records a case, however, in which a gentleman suffered from a temporary attack, respecting which very unfavourable prognoses were given, but from which he perfectly recovered. Many years afterwards, on post-mortem examination, a very vascular knot caused by intussusception of all the coats of the right ureter was found, to which the former attack of albuminuria had probably been due. He records other and remarkable cases in which albumen was present in considerable quantity in the urine as a result of co-existent or previous surgical disease, or following an operation not affecting the urinary organs.

Notes and Queries.[1]

Iodide of Potassium in Itch.—Dr. H. B. Spencer, of Oxford, sends us the following note:—"I wish to call the attention of the profession to the great utility of iodide of potassium ointment in the treatment of scabies. This disease has prevailed very extensively in Oxford lately, and I have been over and over again requested to cure it without giving sulphur ointment or anything that would smell or stain. Iodide of potassium ointment fulfils these conditions completely, and it has been in my hands a cure *as certain* as sulphur ointment. There is no need for the patient to go to bed, but it should be well rubbed in all over the body night and morning for a few days. Dr. Fox mentions this use of it in his work on skin diseases, but it is not named for this purpose in Dr. Ringer's work on therapeutics, nor is it so generally known by the profession as it deserves to be."

Oil of Yellow Sandal Wood.—A surgeon writes to us from Glasgow as follows:—"Has the above remedy any virtues? In some of my cases it has failed, and several of my *confrères* have informed me that it has done likewise with them. The names of the gentlemen recommending it are well known to the profession as honest workers, but may they not be enthusiasts? As far as I can find, Dr. Thomas B. Henderson, of Glasgow, introduced this oil in a paper in the *Glasgow Medical Journal*, April 1865, and informs us that in India the powder of sandal wood is given in milk for gonorrhœa; of the oil, the dose he recommends is 20 to 40 minims, with some aromatic. Next we have Dr. H. S. Purdon, of Belfast, writing on the oil of yellow sandal wood, *Medical Mirror*, September 1866, who differs from Dr. Henderson in one or two particulars, but recommends it combined with oil of cubebs and

[1] The Editor, being desirous of making this department a useful medium of communication between practitioners, will be glad to receive short notes on theoretical or practical points in therapeutics,—brief jottings on those numerous queries which suggest themselves from time to time to a medical man as he "goes his rounds," but which he has neither the time nor, in some cases, the opportunity of answering. The Editor does not pledge himself to reply to every question addressed to him, but he hopes to make the "department" the means of supplying the information required; and this he can only effect by the hearty assistance of his readers.

copaiba. The next writer is Mr. Berkeley Hill, of London, *British Medical Journal*, July 6, 1867, who enters into more details, and reports nineteen cases of various duration, but on the whole thinks well of the remedy given with liquor potassæ. And lastly we have an article from Dr. H. W. Beach in the *Boston Medical and Surgical Journal*, November 1868, who informs us that in ordinary cases five days are sufficient for cure, and it is to be recommended in gleet. This gentleman relates over 100 cases. He has also tried the white and red oils, but they are not so effective as the yellow, the best preparation of which is imported from Bombay. Dr. Beach gives from twenty drops upwards on lump sugar. On the above remarks I offer no comments. Can any of your readers record their experience and enlighten me?"

STRYCHNIA AS A REMEDY IN NERVOUS HYPERÆSTHESIA.—Professor Mackey, of Birmingham, sends us the following note:

"The following case will be found interesting as illustrative of the distinct remedial action of the medicine: its publication is suggested by one bearing the same title in the *Practitioner* for May last.

"Mrs. H——, æt. forty-four, in January 1868, stated that twelve years before she had first felt numbness in the fingers of both hands, but had been able to bear with it until two months ago, when it had begun to get much worse without apparent cause. All fingers are affected, but most the second and third. It is especially about the nails, but often extends up the forearm to the elbow. It becomes worse at night, and lately pain with it has prevented her sleeping properly: if she sleeps for a time the hands involuntarily clasp themselves, and she wakes feeling a heavy numb aching, sometimes tingling, and such stiffness that she can scarcely draw them apart; rubbing relieves; there is no loss of ordinary sensation, and their general feeling is one of heat, never of cold.

"The patient is still regular, is well nourished, not 'nervous' looking; but her father is always under a 'nervous fear,' and *his* mother drowned herself when he was a baby. Patient has had ptosis of the right eyelid, and occasional spasmodic closure of it, for some years; sciatica four years ago; often has flushings of the left side of face and neck, and œdema of the left leg. No albuminuria or sign of disease of vascular system.

"*January* 22.—Passed a gentle electro-magnetic current from one hand to the other, for ten minutes; it was felt acutely. Began ♏iv of liq. strychnia, B. P., ter die sum.

"*January* 23.—Slept well, and has been free from pain and partly from the numbness ever since the application and the first dose of medicine.

"*February* 1.—Has continued medicine and magnetism once daily and is much improved. Desirous to see which remedy was the real one, I directed her to omit the strychnia and use the current only for next seven days: then she reported that she had had several severe returns of hot aching pain and numbness, traceable perhaps to exertion.

"*February* 7.—To omit the magnetism and resume the liq. strychnia, ♏iv.

"*February* 14.—Still waked sometimes with aching numbness, but the pain is not nearly so bad: the numbness seems to pass off when she gets about her work, and is scarcely felt towards night. Expresses much confidence in the medicine: it has no effect on bowels. Increase dose to ♏vj.

"*March* 17.—Has continued treatment, and considers herself so well as to wish to omit it.

"*July* 1869.—Up to this date she has remained fairly well: some numbness returned within a short time after last visit, and has remained more or less, but has not prevented her from washing and sewing, and she has had *no recurrence* of the severe pain."

Sulphurous Acid for Throat Diseases.—A country practitioner asks us, which is the best way to apply sulphurous acid in cases of ulcerated throat? There can be no doubt in our mind that the form of spray is best. Strong gargles of sulphurous acid are not well borne. But in the form of spray even the pure acid can be borne, and produces extraordinary benefit in most forms of low ulceration of the throat. We have been really very much astonished lately at the extraordinary effects of this remedy. Compared with every other kind of application in that low form of ulcerated sore-throat which one calls "malignant," and which occurs sometimes in a distinctly epidemic form, the pure sulphurous acid spray shows to great advantage. And even in diphtheria we believe that its use at a very early stage would do much to prevent or diminish the formation of false membranes. In fact, the local treatment of diphtheria is rapidly assuming greater importance and a more assured basis. Injection of sulphurous acid spray to check the *formation* of false membranes, and (failing this) injection of lactic acid (*à la* Bricheteau) to dissolve false membranes when they have been formed, are the most important indications which modern science affords for the treatment of this terrible disease.

Dr. Beddoe, of Clifton, writes to us:—"I see you have been discussing the therapeutic use of muriate of ammonia. I have employed it for a good many years with the object of removing local congestions and hypertrophies. Chronic engorgements of the uterus have seemed to me particularly amenable to this agent.

Slight hypertrophies of the cervix, with more or less of uterine leucorrhœa, have disappeared under treatment by it either alone or in combination with some preparation of bark. When it is useful in amenorrhœa, I believe it to act in this way. I generally give 10-grain doses. Most patients take it well enough; but in a few cases it disagrees, and causes vomiting." [We regret that this note was accidentally omitted from the August number.—Ed. Practitioner.]

Dr. Macleod of Ben Rhydding.—This gentleman has written to us complaining of our late review of his book as unfair in tone. We have only to remark that in the first place the Editor of this journal, who was the author of the review, is quite unacquainted with Dr. Macleod, and could have had no possible prejudice against him. And secondly, that we are very glad to correct, on Dr. Macleod's authority, the statement, which we had made in good faith, that Dr. Macleod seemed to be a homœopathist. It appears that this is not the case, and we are glad to correct this error, and to repeat that we have not questioned Dr. Macleod's practical ability in the treatment of disease. We simply criticised the scientific tone of his book.

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[1] Any of the foreign works mentioned below may be procured by application to Messrs. Kelly, Piet & Company, 174 Baltimore Street, Baltimore.

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ON THE TOPICAL TREATMENT AND DRESSING OF WOUNDS.

BY JOHN WOOD, F.R.C.S.

Examiner in Anatomy in the University of London; Assistant Surgeon to King's College Hospital.

A visit to the chief metropolitan and provincial hospitals of the United Kingdom will, perhaps, in no respect attract more of the surgeon's attention than as regards the great diversity of the local applications to, and methods of dealing with wounds, both accidental and operative.

Here, if anywhere, custom, habit, and empirical eclecticism hold full sway, and the most opposite plans may be justified by reasoning more or less satisfactory. In the practice of a few old-fashioned surgeons, the method of treatment by unguents of various kinds is still adhered to. In many of the London hospitals the Edinburgh practice of cold or warm water dressing is carried out in its entire simplicity; while, in certain cases, the time-honoured method of poultices still keeps its clammy sway. Irrigation by cold water is also extensively employed. In some institutions dry lint and charpie are prevalent, and in one well-known provincial hospital this last rag has even been dispensed with, and the absolute nudity and exposure of the

wound to the air justified by argument, and, what is better than this, by a certain amount of success. The total disregard of atmospheric influences upon which this practice is based stands in curious and effective contrast to the carbolic acid method, first employed extensively as a local application in Paris, but more lately brought into prominence in this country through the advocacy, by Professors Syme and Lister, of its virtues, when applied with a view of totally excluding by chemical action the noxious principles supposed to be present in this circumambient fluid.

The idea that noxious, invisible organisms present in the air, and ready to multiply on the first *nidus* which presents itself, are frequently the causes of mysterious and otherwise inexplicable diseases, is gradually but perceptibly modifying the theory and treatment both of medical and surgical diseases, and to it is evidently owing the plan of carbolic treatment just alluded to. Like all new theories, it is apt to be pushed, no doubt, by ardent advocates beyond its legitimate limits, and is taken to explain all kinds of phenomena, to the exclusion of the older, and in many instances more reasonable, explanations. And this is the danger which besets this theory at the present time. It is from its friends that it has not the least need of being defended.

To the philosophic observer of the fluctuating tide of medical theories, nothing is more curious and interesting than to compare the extravagant laudations and impossible expectations of some of its supporters, with the contemptuous scorn or indignant denial of its merits which are to be found among many experienced men. The truth may, and doubtless does, lie somewhere between the two extremes.

Atmospheric influences do most certainly operate upon wounds and sores, but these do not explain many of the phenomena witnessed in them. There are other agencies at work, in the constitution of the patient and in the character of the injury, for which the extreme supporters of the carbolic putty treatment do not seem to make sufficient allowance. Thus by ignoring, or by not making provision for the latter, they endanger the success of the treatment directed against the former. And this seems to be peculiarly the case with the carbolic putty dressing, as

applied to large abscesses or compound and comminuted fractures, for which the hermetically sealing up by the putty application does not seem to be at all suitable, but has in many very experienced hands, led to the most deplorable results.

Pus may and does form in the interior of the body, totally separated from atmospheric influences. Inflammation and mortification do occur in deep-seated parts unoperated on by this cause. And the occurrence of these may take place under a putty covering as well as elsewhere. And their proper recognition and treatment by free evacuation the putty method tends to prevent. Hence the frequent disappointment in its results, even when applied in the most careful manner.

The same objection may apply, though less forcibly, to the plan of no dressing at all.

The tegumentary coverings, being highly vascular and active in reparative and adhesive processes, often heal when divided more quickly than the deeper seated parts, and the glue-like formation of plastic lymph often prevents the escape of morbid material effused in the less active or more extensively injured tissues. To this the older surgeons gave the name of "false healing," which is still retained in the vocabulary of laymen, and by many professional men. It happens in many cases of rapid healing of stumps after amputation, and demands a free opening for its treatment. Exposure to the air promotes its occurrence, and the formation of a scab often conceals that of pus more deeply seated.

The latter plan is furthermore open to the objection that the wound is liable to become more speedily affected by all atmospheric changes of cold and heat, dryness and moisture, and to electrical and other conditions promoting rapid decomposition, as well as to infection from other sources. It shares, however, with the carbolic sealing-up method the advantage of being more free from the contagion carried by the hands of dressers, by lint or by sponges, and by the water employed in dressing. Much of the success claimed for both these plans appear, from experiments made by the author in the surgical wards of King's College Hospital, to depend upon the healthy or unhealthy condition of the hospital, or of the general atmosphere where the experiments were being carried out. It was found that, at

times, all the various and dissimilar plans carried out contemporaneously were pretty nearly equally successful in parallel cases—which did not involve sloughing; while, at other times, all were nearly equally unsuccessful in promoting speedy healing. It was found, in short, that atmospheric influences act generally more powerfully upon the whole constitution and condition of the patient, than upon the wound or sore locally, and operate from within the patient's system for good or for evil.

Many of the trials of these two methods have been made in country places under all the advantages of pure air and water, and their results have been, perhaps, owing mainly to this cause.

As the air may carry infection to open wounds and sores locally, so undoubtedly may water. In the simple water-dressing, the liquid employed is often, nay usually, exposed for hours or days to the burdened atmosphere of the ward or sick chamber, and affords the moisture favourable for the propagation of organic or simply chemical decompositions. And this seems to be a real objection to the apparently cleanly process of simple water-dressing in the wards of an hospital. And of course the liability to these changes is increased by warmth, either from the weather, or artificially produced in the water. Or, on the other hand, as the history of cholera and typhoid fever shows, the water may be infected at the very source from whence it flows. Still more forcibly do these objections tell against the use of warm poultices under circumstances favouring these kinds of infection. In addition to the disadvantage of promoting decomposition and infection by warmth and moisture, they possess the property of fermentation and of promoting catalytic changes peculiar to their starchy and other elements. The impetiginous pustules frequently following the continued use of poultices prove the acrid and irritating effect of these changes upon the skin, especially in delicate persons. It does not seem to be clear whether the chemical changes which take place during the decompositon of poultices are favourable or unfavourable to the developmental changes of the lower organisms; but it would seem clear that the retention by means of poultices of blood and discharges undergoing rapid decomposition under the influence of warmth

cannot produce effects favourable to the healing of wounds. The same remark applies with almost as much force to the ordinary load of warm or cold water dressing; saturated with decomposing masses of blood or pus, it affords a sure *nidus* for putrefactive changes.

The proper employment of poultices and water-dressing seems to be then in those cases where emollients are required to subdue inflammation, soothe irritation, and favor the progress of suppuration previous to an actual solution of continuity of the surface. In such cases a warm soft poultice or water-dressing frequently changed is of real benefit. But when an open sore is formed, producing pus in any quantity, or where sloughing is present, such applications are not the best that can be used.

The use of ointments, formerly in much vogue, is at the present time very limited. Their liability to become rancid, and to be mixed with, and tenaciously to retain, the flying dust and putrefactive particles of the ward and sick-room, has been felt to be an objection. They have also the disadvantage of leaving a good deal of smeary dirt upon the wound, to which foreign particles tenaciously adhere; and this is often very difficult to remove and cleanse. By skilful and judicious use and care these objections may be very much avoided.

When adhesive plaster is used to bring the sides of the wound together, or to maintain pressure upon a particular place, the application of a narrow strip of lint, covered with simple dressing over the plaster at the point where it crosses the wound, prevents irritation by the hard edges of the plaster, and promotes its easy removal.

In old sores ointments have a certain facility of application by the patient himself, which render them of great use to out-door hospital practice. They prevent false healing and premature scabbing, which is apt to interfere with beneficial progress in cases not submitted to constant supervision. The admixture of chemical disinfectants and of stimulating substances with this form of dressing is easy. The former tends to prevent the decomposition and organic changes to which fatty as well as aqueous substances are liable, and the latter may be required from the condition of the sore.

There can be no doubt that under certain conditions the chemical or oxidizing action of the atmospheric air is hurtful to an injured surface, apart from all theoretic considerations of infection or poisoning. This seems to be especially the case in burns, scalds, and extensive denudations of surface. Hence the relief and comfort experienced by covering the exposed nerve-fibrils by an impermeable coating of collodion and castor oil, and by the application of cotton wool and carron oil. In ancient times the application of oil to sores was very much more practised than in modern times. It is of great value when used to cover from the action of the air the eruptions of the various exanthemata. In hot weather, and in hot climates, much of its efficacy is owing to its deadly effect upon the life of insects, which crowd about an open sore, and deposit their eggs by the same instinct or choice of a site favourable to development which determines the formation of the lower organic forms also.

Both the latter considerations militate fairly against the plan of open exposure of wounds to the air.

Balsamic tinctures were also formerly a favourite application —the "Friars' Balsam" (Tinct. Benzoin co.) having acquired a famous reputation for healing recent sores. We do not nowadays, I think, sufficiently estimate the effect of aromatic gums in excluding the air, arresting putrefaction, and overcoming the smell arising from all open sores, which attracts flies to deposit their eggs. In some of these cases a mixture of olive oil and Peruvian or Capaiba balsam has been found of great effect as a stimulus and protection to a sloughy surface. In very hot, moist weather a wound may become fly-blown in a few hours, in spite of the ordinary care and cleanliness.

Upon the whole, then, after a review of these different methods of dressing wounds, it seems that any sealing up or permanently covering of a deep wound does not protect the patient from the evils of deep-seated inflammation, suppuration, or mortification, which the nature of the injury or the condition of his constitution (permanent or temporarily induced) may bring about, notwithstanding that it may be quite effective in excluding injurious external agencies. The retention of the noxious matters formed under these conditions is, on the

other hand, decidedly injurious, leading to burrowing of matter, deep abscesses, and extension of inflammation, to the degree of causing in many well-authenticated cases the loss of the entire limb, and the endangering of the patient's life.

The former objection applies, though less forcibly, to the practice of exposure to the air, leading to the formation of a scab or false healing by inspissation of the fluids effused from the vessels. The latter plan is also liable to the full and unrestrained force of local infection from the air. An argument in its favor has been drawn from the advantages of the *light*, as well as the *sweetness*, thus obtained. To this it may be said, however, that most of Nature's most favourable renovating processes are carried on in her dark laboratories in the interior of the body, and that, *à priori*, one would say that light would be calculated to interfere with, rather than to promote the reparative influences, while *sweetness* can be equally effectively obtained by chemical agencies under cover.

The *desiderata* which we seem to require in an application calculated to be the most generally useful to deep wounds and suppurating sores, are, a liquid form, giving us all the emollient advantages of pure water,—containing an agent destructive to all the germs of low organisms and of insects, not injurious to the healing process, but which shall be permanently held in solution, and capable of combining with chemicals possessing other desirable properties when applied to wounds.

No other substance combines so many of these useful properties as *carbolic acid*, whatever may be thought of its disadvantages when used in the way advocated by Professor Lister. Being soluble in water to an extent sufficient to act beneficially, and yet not enough to be injurious, the only drawback to its use as a simple lotion or solution lies in its great volatility and the looseness of its aqueous combination. After an hour or two of exposure to the warmth of the body, the carbolic lotion loses altogether the smell of the active agent.

To a considerable extent this objection applies to the solution in oil also. This again may be made so strong as to exercise certainly a destructive effect upon the newly-formed granulations, and, often, to prevent their formation altogether ;—while a dusky inflammation of the surrounding skin is a common result

of a direct contact of carbolized oil or putty, combined in the proportion of one in four. Applied to sloughing and phagedenic sores, a combination of carbolized oil with the spermaceti or resin cerate, is an extremely useful application. It sticks close to the sore, effectually excludes the air, prevents all local infection and organic developments, and stimulates the failing processes of the part, while permitting easily of the escape of the discharges. The effect of carbolized applications in diminishing and destroying suppuration, is one of the most wonderfully striking properties of the agent, and this alone should convince us of its capabilities and antipyæmic properties when applied judiciously. It is the same power, no doubt, which operates also, when in stronger doses, in deterring the formation of granulations. The proper way of using it is evidently so to proportion its strength and combination as to obtain the beneficial and avoid the injurious effect. Most surgeons will, I think, now admit that suppuration is a wasteful and debilitating loss of cell force or plastic formation, which would be better utilized in building up granulations. It is certainly looked upon with satisfaction as the evidence of a favourable crisis in some phlegmonous inflammations. This, however, is only the concomitant result of an advantageous change in the morbid processes, and cannot be estimated as in itself beneficial.

The advantages of carbolic acid may, I believe, be best obtained by its combination with other metallic salts usually employed as stimulants, astringents, or detergents, to wounds and sores. The acid combines readily in the shape of a soluble and permanent double salt with the sulphates of zinc, copper, and iron, and affords a very convenient form of lotion, which retains in combination the volatile agent until liberated by the slow disintegrating action of the vital or semi-vital fluids. A disinfecting change is thus going on on the surface of the wound at the same time that the metallic salt is exercising its own beneficial properties.

I employ the sulpho-carbolates of zinc and copper, dissolved in water in the proportion of 3 to 5 grains to the ounce, as a dressing, applied by strips of lint, and covered by oilskin in the same way as water dressing. It may be used also in the way of irrigation. It keeps the wound clean and free from smell,

and has certainly much and beneficial effect after operations upon tumours, &c., involving much subsequent discharge. I employ it also as an injection in gonorrhœal and other discharges from the urethra or vagina, and also as a dressing for superficial venereal sores.

The double salts may also be used in the way of ointment, by being well mixed in the same proportion with simple cerate.

Of the effect of the double salts of carbolic acid as an internal remedy, as recommended by Dr. Sansom, I have had little experience, but as a local application I am convinced that in them we have an extremely useful addition to our *armamentarium* in combating that insidious and fatal enemy of the surgeon and his doings, *pyæmia*. In this a powerful correlative agent is to be found in the free use of Macdougall's powder, as a means of carbolizing the air surrounding and breathed by the patient, in a serious case.

ON THE DANGERS OF BLISTERING, ESPECIALLY IN PNEUMONIA.[1]

BY DR. DAUVERGNE, PÈRE,

Médecin de l'Hôpital de Manosque, &c.

TRANSLATED BY THE EDITOR.

In a former article upon pneumonia I have stated my treatment, and pointed out the dangers of bleeding; I shall now complete my task, by showing that blisters are useless and hurtful in this disease, and that they are much abused in many cases.

It was in 1835, after treating two pneumonic patients ineffectually with large blisters, that I renounced that treatment; for I had perfectly satisfied myself—1. That blisters in no way diminish the duration of the disease; 2. That they increase the febrile excitement, *i.e.* the general heat and the rapidity of circulation; 3. That they are a real misery to the patient, aggravated by the slightest movement, and especially at each dressing; 4. That each dressing involves danger, because it is necessary to uncover the chest, which momentarily checks the cutaneous transpiration, sacrificing the effects of a natural general revulsion for the sake of a limited and artificial one; 5. Finally, I perceived that a fresh inflammation developed near an inflamed part is more likely to aggravate than to divert the disease from the latter.

I observed also, at the same time, that ordinary pneumonia was neither mitigated nor diverted, since stethoscopic exami-

[1] On account of the great interest attaching, just now, to the question of counter-irritation, the Editor has departed from his usual practice of inserting only papers which are written expressly for the *Practitioner*. The article of Dr. Dauvergne, which is reproduced from the *Bulletin de Therapeutique*, is very valuable, as embodying the results of many years' extensive observation, by a most intelligent physician.

nation on the day following the vesication with cantharides revealed no modification of the physical signs, and the fever itself was really increased, which obliged me to repeat the bleedings, just as if the blisters had never been applied.

What then is the good, I asked myself, of a treatment which does not diminish the local symptoms, which aggravates the general phenomena, which tortures the patients, and is likely to aggravate, and almost always to prolong, the disease by the mischief done in the necessary exposure of dressings, &c., &c.? I renounced the practice at once, and as I have never found any harm, I have continued to dispense with it. But although I have given it up, many practitioners, especially country doctors, have not done so, for very often I find myself in absolute opposition with them on this point, and I am therefore now compelled to justify my practice, and to ask them for an explanation of theirs.

For my part, before employing a remedy which is painful, inconvenient, and disagreeable from the odour of suppuration, I should need to be well assured that it either diminishes the extent or arrests the progress of pneumonia. But I know of no one who has first demonstrated by stethoscopy the degree and extent of a pneumonia, and then, after blistering, has proved the diminution either of the extent or the intensity of the inflammation. Galen applied blisters because Asclepiades, Archigenes, Ætius, and Cælius Aurelianus had applied them. Cullen proclaimed them because Sydenham and Freind had eulogized them. Finally, which is the strangest and saddest thing, the popular as well as the medical *furore* for vesication has gone on increasing till we all fancy ourselves compelled to apply blisters. And all this when no one has given us any reason! This abuse was needed to unblind the eyes of some of the *élite* of the profession, at the head of whom we should mention Louis, Chomel, Grisolle, Valleix, Rilliet, Barthez, and others, whose words and whose experience we shall invoke.

It is said, however, that M. Gendrin still states that he can make a pleurisy or a pneumonia abort by covering the whole of the affected side of the chest, at the outset, with a blister. But has he proved it? And in any case was not his remedy worse than the disease? Did he not cure a simple pleurodynia instead

of a pleurisy? May he not have done much the same thing as our village bone-setters, who reduce dislocations that never existed, and leave real dislocations unreduced?

And indeed, if it were possible thus to relieve incipient pneumonia by revulsion, mere rubefacients, sinapisms, would answer every purpose. Trousseau and Pidoux perceived this, for they said: "At the commencement of an acute disease, if the stage of mere congestion be yet present, a rubefacient is indicated. But we ought to be jealous of a local agent which might produce a persistent inflammation; for, at a later period, if inflammation had been set up, we should have reason to regret the employment of a remedy which might uselessly prolong the sufferings of the patient."

From the date to which I have referred, I reserved blisters for chronic affections; but even in these I very soon altered my opinions in consequence of mishaps: in chronic diseases, because the patient was weakened by these issues, incessantly draining off the materials of nutrition, without restoring, by the continuous effect of habit, the functional harmony which alone is curative; in acute diseases, because for the few cases in which counter-irritants were indicated, the action of simple mustard plasters was much more prompt, and actually more powerful to give a physiological stimulus to the enfeebled vitality, without exposing the patient to dangerous consecutive suppurations.

Finally, the uselessness of "exutoires" in general was proved to me by the genuine effect of hydrotherapic medications, which only act by modifying, regulating, or increasing the organo-functional synergy, by exciting particular secretions, which then represent truly excrementitious conduits, since we can at will, and according to our need, provoke intestinal, renal, cutaneous, or even pulmonary secretions. (See my "Hydrothérapie Générale;" Paris, 1853.) In the present day, Messrs. Todd and Bennett in England, Béhier, Trastour, Pécholier, &c., in France, have proved by their alcoholic treatment that the latter has no direct effect on the pneumonia, but sustains and improves the general condition of the organism, which it thus gives time to free itself from the malady. Of what use are blisters if their only action must be a similar one, and ought only to be applied in analogous pathological conditions? But of what use would

be my experience and opinions if they were isolated? Let me examine afresh the statements and the remarks of eminent practitioners, and let me prove that if I deceive myself, it is at least in good company. Louis, the sceptical physician *par excellence*, the reckoner, the conscientious verifier, heads the procession of this learned phalanx.

"Not only," says he, "have I banished blisters from the treatment of pneumonia, I have also discarded them in that of pleurisy and of pericarditis. For the last five years I have treated at the Hôpital de la Pitié 140 patients attacked with pleurisy, without once employing blisters; they all got well. It has been the same with thirty cases of pericarditis developed under circumstances of perfect health. These facts, it will be allowed, make the utility of blistering, in acute inflammations of the chest, more and more problematic. . . . What led me to relinquish blistering in chest inflammations was, that the attentive study and rigorous analysis of facts had compelled me to peceive that acute inflammatory affections, so far from preserving other organs, not primarily affected, from inflammation, excite inflammation in them; so that the more serious the primary inflammation, and the greater the fever, the more danger is there of secondary affections. How, then, can we believe that a blister will control inflammation, since it is itself a new inflammation added to the other?"[1]

The above is assuredly practical medicine, and not expressed in vague words, but supported by weighty statistics, which are very different from anything that the partisans of the opposite teaching can produce. And was it not true practice of the best kind, when M. Andral, after witnessing the application of so many blisters in the clinic of Lerminier, who would not let his pneumonic patients off with less than three or four blisters at once upon the chest and upon the legs, said (some fifteen years later) from his chair at the Faculty, "Be very cautious in the employment of blisters, although many physicians make great use of them? In general they are more a torment than a solace to the patients."[2]

Trosseau, the eminent clinicist, the physician who has been

1 Recherches sur la Saignee. Paris, 1835. Pp. 58, 59.

2 Cours de Pathologie, t. i. p. 395.

specially considered as one of the most complete practitioners, thus expressed himself:—"As to blisters, I agree entirely with the opinion of a large number of my colleagues, that at the height of the disease they are capable of increasing the febrile excitement, and that at a later stage they become useless."[1]

Is this clear? But there are other voices, not less authoritative, which speak with a conscientious indignation which we cannot too carefully consider. The first is M. Coste (of Bordeaux), exclaiming in the midst of the Société de Médecine: "One counts by thousands the cases in the 'exutoires' have done nothing but give another torment, another pain, to the patients. At present, gentlemen, I believe that in my sympathising heart I have taken the final resolution, *at the risk of a momentary unpopularity*, not to employ them any more."

What, then, shall we say of a remedy which is painful, disgusting, and possessed of more proved defects than probable advantages? Assuredly it is a remedy to be finally repudiated, or language has no longer any value. But this is not all; let us hear the ingenious clinical professor of Strasburg, Forget. He expresses himself in not less categoric terms in general on blistering in chest diseases: "Blisters are useless, and provoke a purely wasteful pain and exhaustion, to such an extent that, for the majority of thoughtful practioners, they are a kind of mere charm, which they apply *more for the sake of something to do than in the hope of producing the least benefit.* How many unfortunates have I personally seen perish, martyrs to these issues, with which the thorax has been seamed by practitioners of robust faith!"

What can one say more? Must we recall the fine discourse which Malgaigne made about ten years ago? Must we evoke his grand voice, making the arches of the Academy of Medicine ring, and crushing vesication and its partisans with the immensity of his science? Must we recall the emotion that followed in the medical world, so that people thought that medicine was shaken to its foundations, and implored the energetic professor to be

[1] Clinique de l'Hôtel Dieu, t. i. p. 608.

[2] *Journal de Med. de Bordeaux*, t. ix. pp. 442, 443. 1851.

[2] De la Curabilité de la Phthisie. (*Bulletin de Therapeutique*, t. xxxiv. p. 183. 1848.

silent, that he might not destroy at a blow the "exutoires" so passionately beloved by the public and by the doctors who flatter it? No, I should never have done if I were to reproduce all this; I shall limit myself to quoting certain practical observations, significant enough, and then, to complete the subject, I shall analyse the physiological and therapeutic effects of blisters.

Obs. 1.—Two cases, about 20 or 25 years ago, first compelled my conscience to reject every kind of *obsequiousness*, from whatever quarter it might come. The first was that of a child of three years, affected with acute pleurisy and effusion, who after the application of a blister, proposed by the doctor and agreed to with transports of joy by the friends, experienced an increase of the effusion and of the fever, which became uncontrollable. The child sank, either from the artificial inflammation, or from the loss of valuable time.

Obs. 2.—The other case was that of a young man with typhoid fever and ataxy. I advised musk, but a colleague suggested blisters to the legs. It was in vain that I reminded him that, in reference even to idiopathic brain affections, Rochoux, so competent an authority, had said before the whole Academy, that they were more harmful than useful, seeing that the pain they caused, far from removing the cerebral suffering or irritation, increased it, because it was the brain alone which perceived the pain produced in the legs. All these arguments paled before the enthusiasm of the surrounders, and the blisters were applied. The ataxic delirium was calmed by the musk, before the blisters had taken; but they *did* take, so effectually that when the young man had got quite well he was kept in bed by gangrenous wounds, which the cantharides plasters had caused.

Would one believe it? Such facts fail to undeceive any practitioner "of robust faith," as Forget calls it, or the public which is victimised by it. The patient is always enchanted with remedies that produce a palpable effect which he sees with his eyes, and judges with his senses.

Obs. 3.—This spring I went to visit a child at its nurse's house, but could not find it. I called out; a boy of six or seven years came out from a cabinet, walking slowly, gravely, like a little old man. He was pale, puffy, with bent head, his neck enveloped up to the ears in a handkerchief, and as stiff as if it

had been screwed into an iron collar. "You have a blister on the nape of your neck?" I asked. "Yes." "You are ill?" "No." "Why, then, the blister?" "Oh," said he, with a little air of whimsical pride at being submitted to such a medication, "they put them on my arms too" (touching each of his limbs, with a comic gesture, perhaps some ten times); "when one is done with they put on another." "And now that there is no more room on the arms, the neck has its turn? Do you cough?" "No." "You have headache?" "No!" "You have nothing the matter with your eyes; why do they put so many blisters on you, then? Have you a little gland in the neck?" "Oh, yes, but it only came lately." "Who is the doctor, then, who prescribed all this for you?" "We never see a doctor; my mother puts on the blisters, and the pharmacien gives me cod-liver oil."

The strange thing is, that many doctors would think themselves helpless if they had no more blisters; for one of them, assuredly in good faith, asked me naïvely, "But what can we do then? I had the opportunity of showing him what to do in the case of one of his patients, the first sight of whom profoundly saddened me.

Obs. 4.—It was a child of four years, confined to bed for the last two months with bronchitis, which had been constantly, successively, and solely treated by blisters on the arms and round the chest. One or two were always kept suppurating, in order to justify the sarcasm of Molière—*Si non sufficit, reiteretur.* The little patient was like a mummy; the emaciation was so great that the dental arches protruded as in a monkey's face or a skeleton, so thin were the lips, and so large the mouth. The eyes were deeply hollowed, and the cheeks stretched over the malar bones. The child was lying, with head bent, hanging by its own weight, so incapable was the wasted neck of sustaining it. But when I was going to take his arm to feel the pulse, he sprang up like a lion, open-mouthed, to bite my hand. "What is that for?" I asked the mother. "Ah, sir," said she, "he thought you were going to dress his blisters. He always does that when we go to dress them, and we are obliged to hold him." What could be done, in the condition of this poor martyr? The blisters had not removed his cough, his pulse was small and

rapid, his skin dry, hot, almost like parchment. I did not hesitate to advise tepid whole-baths in bran water to calm the pain of the blisters, and moisten the skin a little. I ordered syrup of digitalis, and demulcent drinks and milk (first diluted and then pure), to diminish the fever and the bronchial inflammation. This treatment gave immediate relief, and ultimately quite cured the patient.

Obs. 5.—About the same time I saw another child, similarly affected with bronchitis, which was then epidemic. This one, which had been treated in the same way, was dying when I was called to it; but I was struck with the remark of the mother, that the child gnawed the bed linen to enable it to bear the pain when its blisters were dressed.

Do you want facts that speak more loudly? Must you have plainer proofs of the uselessness, the abuse, the dangers, the tortures, of these blisters? Is not this pure practice, and that of the worst kind?

On what is blistering founded? Upon an idea of revulsion. And the physicians who employ it pretend to repudiate theory! Must we for ever repeat that practice can only be the result of a preliminary idea which inspires it? Well, this idea of revulsion, on what is it based? On this aphorism of Hippocrates: *Duobus doloribus simul obortis vehementior obscurat alterum.* Yes, but in the first place pains are not inflammations, nor even congestions, and to obscure or to mask a thing is not to divert or to destroy it. Yes, the old man of Cos was right when he said that a stronger pain can mask a weaker, but he was talking of a phenomenon of sensation. If a violent toothache comes after a rheumatism, it will make one forget the latter. It is very common for a mental pre-occupation caused by pecuniary loss to be quite effaced by the loss of a child or a beloved wife. It is known that a neuralgia or a neurosis may be cured by a strong emotion, or by a lengthened pre-occupation of mind. For instance, Barras forgot, and was cured of, his gastralgia in the grief of seeing his daughter fall ill and die of phthisis. It is in this way that the cures of the bone-setters, the sorcerers, the homœopaths are to be explained.

Moreover, the aphorism of Hippocrates, on which the whole theory of revulsion is founded, could not be applicable to an

inflammation artificially set up, even at a distant point, because the two inflamed parts are connected by the medium of the circulation, which is excited in direct proportion to the number and extent of these inflammations. Do we not see and know constantly, that an affection, an inflammation, is by so much the graver, when it is complicated with another? But what are the wounds of blisters but little inflammations, nay, often serious inflammations?

A fortiori, if we create inflammations near to disease, not only is there the chance of failing to divert the latter, we run the risk of imitating, as one of my most illustrious teachers, Richerand, often said, a blind man armed with a stick, who should strike sometimes the disease, and sometimes the patient.

At the commencement of an inflammation, when there is as yet nothing more than congestion, or still better at the end of acute diseases, when the organic machinery is failing, when external heat diminishes and abandons the extremities, when the sensibility is lowered—nothing can be better than to restore the caloric, to excite the circulation, to re-animate the sensibility of those *vasa vasorum*, whose action seems at the point of extinction, to accumulate heat in the parts remote from the disease, to awaken sensation by sinapisms, by calling the blood thither and diverting it from the hyperæmic part where it seems to accumulate and stagnate, to employ even powerful cupping-glasses; for all this is done without a wound, and the action thus set up is more lively, more prompt, and more sustained than that of blisters; not to mention that the physician can suspend or moderate the effect at will. Doubtless this is the *good* practice, the efficacious revulsion, which we have often employed, sometimes uniting a local with a more distant derivation, in order that the two actions may heighten each other.

In the same way I have never understood the theory, and consequently have never employed or consented to the practice, of applying blisters to the head in cerebral inflammation. In the first place, I have never seen any but disastrous results from the treatment; and secondly, it is the height of illogicality to make an ulceration—an inflammation—on the scalp when there is already an inflammation of the brain, and perhaps of the membranes; although in the case of erysipelatous inflammation

of the scalp we so dread lest the cutaneous inflammation should extend to the membranes or to the brain itself.

What function remains, then, for blisters? Their action on the nervous system in modifying pain, the changes of sensibility which they produce in the neuroses, such as sciatica, intercostal neuralgia, and some varieties of tic-douloureux.

They may be utilized also, as I have done, in certain serous effusions, in latent pleurisy, but on the express condition that there be no fever present. I have obtained good results in encysted goitres, after the example of our illustrious master, M. Jules Cloquet. It is possible too, with much precaution and prudence, to obtain favourable results in indolent hydrarthroses, in some recent hydroceles, possibly in congenital hydrocephalus; but in all these cases blisters can frequently be replaced by iodine applications, or by compression; and they act in these cases not by revulsion, but by simple endosmose, attracting the fluid through the tissues according to Dutrochet's doctrine.[1]

Finally, it is their genuine inflammatory action which produces good results in surgery, as in the cases (referred to by Petit of Lyons, Conté, Herrera, and Dupuytren) of erysipelas, and (by Velpeau) of diffused phlegmon. Here, in fact, they arrest the disease by drawing into a limited and enclosed area the fluids of one and the same sheaf of capillaries. They are here doing their true work, for they add to the inflammation, and precipitate its resolution by provoking a premature suppuration at a part already disposed to this process, and this with the chief intention of limiting the extension and diffusion of the disease.

Even in these cases, however, although they are the most favourable for blisters, it must once again be said that the latter are not indispensable; that they may be advantageously replaced. Thus, not to mention the four cases of angioleucitis treated in the Hôpital Necker by M. Guyon, by means of compression, and published by Mr. Edward Alling,[2] let us quote Velpeau himself, who criticises his two favourite methods. "The action of blisters is limited to hastening and deciding a suppuration

1 See my memoir, "Sur la Pleurésie avec Epanchement" (*Bulletin de Thérapeutique*, t. lix.)

2 *Bulletin de Thérapeutique*, t. lxxvi. p. 150.

or a resolution which was previously uncertain, when one applies them at the prominent point of indurated masses. In angioleucitis, as elsewhere, blisters have this precious double quality, viz. of bringing about resolution if that be possible, of provoking suppuration if that be inevitable."

It is going a long way to accord to blisters, two actions at once which are entirely opposed to each other, and, notwithstanding the respect which I retain for this great surgeon, I can only see here a physiological contradiction, and in any case it would remain to prove from practice whether blisters do not more readily produce foci of suppuration than resolution of inflammations. That is what Velpeau should first have determined; the more so because, in the cases where he only aimed at resolution, he ought to prefer compression, for a few lines further on he adds: "I might say nearly the same of compression as I have said of blisters. In all diffused subcutaneous inflammations, taken at the early stage, a compression carefully made, a roller-bandage methodically and ingeniously applied, constitutes *the best possible means of resolution.*"

Surely it would need much less than this last expression to put an end to all competition between compression and blisters, and to give the preference to the former. If there were any doubt about it, one might take the patient's own opinion.

After this almost complete review of blisters, what remains of their benefits? But little; and, on the contrary, very many inconveniences. The surgeons, alone, may sometimes rehabilitate them. And in fact it is they who have so widely extended their use. Their habituation to seeing the disease, to be always dressing something, must go for much in their retention of suppuration as a remedy; but that is not rational therapeutic physiology.

ON THE USE OF ACONITE AND COLCHICUM IN COMBINATION IN VARIOUS RHEUMATIC AFFECTIONS, AND ESPECIALLY IN THOSE OF THE EYE.

BY HENRY POWER, F.R.C.S.

Ophthalmic Surgeon to St. George's Hospital.

During the last few years I have employed these remedies to a considerable extent in the various cases of rheumatic disease that have come under my notice, and finding that their use has been attended with great benefit, when judiciously administered, I think it may prove of service if the plan I have adopted be here placed on record. By far the largest number of cases I have had to treat have, of course, been those of rheumatic ophthalmia; but a surgeon to the Linendrapers Company, I have had occasion to see a considerable number of cases, in which the disease has not been limited to a single organ, but has affected the system generally. The members of this society, in fact, according to my experience, show a rather unusual proclivity to rheumatic disease. Nor is it difficult to account for this from a consideration of the peculiar circumstances under which they are placed. For the most part confined throughout the day in hot and ill-ventilated apartments, and during a considerable part of the year exposed for many hours to the products of gas combustion, with doors opening directly upon the street constantly being opened, and on each occasion letting in a flood of cold air; with often only a hasty and interrupted midday meal between breakfast and tea; and with but limited time for exercise, and that chiefly at night, it is not surprising that rheumatic affections are often complained of amongst them.

Rheumatic ophthalmia is a very common affection amongst the poorer class of patients who present themselves at our ophthalmic hospitals. I find from reference to my own notes of cases

seen at the Royal Westminster Ophthalmic Hospital in 1867, that out of 1,700 cases, about 130 were cases of rheumatic and catarrho-rheumatic ophthalmia; whilst in 1868 there were about 180 cases out of 1,800, or one in ten; and at St. George's in 1868, about 47 cases in 740. It is of course difficult to give the numbers with great exactness, because some of the slighter cases would probably be entered under the term conjunctivitis, and some of the more severe under the heads of irido-choroiditis, irido-cyclitis, general ophthalmia, and the like.

The cases to which I here particularly allude under the term rheumatic ophthalmia are those in which the characteristic symptoms are a reddened and inflamed appearance of the eye, which upon examination will be found to be produced partly by congestion of the superficial conjunctival vessels, that present a scarlet colour, and partly of the deeper episcleral and scleral vessels, which are of a deeper pink or purple tint. When the conjunctival vessels, which anastomose freely with each other, are alone affected, the case is usually termed one of conjunctivitis, or of catarrhal ophthalmia; if both the superficial and deeper vessels are congested, the case is termed one of catarrhal rheumatic ophthalmia; and finally, if the deeper vessels are exclusively or chiefly implicated, the case is said to be one of sclerotitis, rheumatic iritis, or of pure rheumatic ophthalmia, and these three conditions merge into one another by insensible gradations. The first and second are often attended by a considerable amount of chemosis and constant lachrymation; whilst in the cases of pure rheumatic ophthalmia this symptom is often absent. The pure rheumatic and catarrho-rheumatic cases are especially characterized by the nature of the pain with which they are accompanied. In simple conjunctivitis of a catarrhal origin, the pain is trifling, and is chiefly of a pricking or smarting character, whilst in the other forms it consists of a more or less severe aching or throbbing in the eye itself, which extends over the brow and temple. The pain in these cases broods, as it were, over the patient by day, yet is seldom sufficiently severe to make him give up work; but at night, or in the early morning, it comes on in paroxysms, which rapidly increase in intensity till the pain attains its acme, which may last for some hours, and may then gradually decline or terminate more suddenly in a gush of tears.

In many cases careful examination will show the presence of ulcers, which are usually lateral, elongated, shallow, with irregular and dentated or eroded margins, and which may readily escape notice, as well from their position near the margin of the cornea as from their bases and borders being clear and transparent. The vision is almost always stated to be impaired, though not to so great an extent as to prevent the patient from reading moderate-sized print, or from working. Occasionally there is some intolerance of light, but this is not a prominent symptom. In the great majority of cases the bowels either are or have been confined, and the subjects of the affections are often thin and depressed both in mind and body. On questioning them, it may generally be elicited that they have recently experienced flying pains in the joints and muscles, especially of the shoulders and loins, and that the urine has been high-coloured or has deposited copious sediments of the lithates. In regard to the ætiology of these rheumatic affections, it is commonly stated by the patients that it results from exposure to atmospheric vicissitudes, to cold or wet, or that it has arisen from sleeping in a damp bed, or in a strong draught, as in a railway carriage with the window open. There can be little doubt that such exposure is often the immediate or, as it is termed, the proximate cause of the attack; but it must be remembered that the system of a healthy man possesses a remarkable power of resistance to the influences of weather, and it is only when the powers of his nervous and vascular organs are depressed that he succumbs to them. Hence the predisposing causes of rheumatic disease assume an importance fully equal to the exciting causes. That mere exposure to cold, even when sudden and alternating with heat, exerts any influence on the production of rheumatic affections in healthy men is to some extent negatived by the experience of Arctic navigators, who almost uniformly found that exposure to a temperature amounting to 60°, or even 80°, below the temperature of the interior of the ship, was rarely followed by any inconvenience. I have noticed, however, that laundresses and washerwomen, who are alternately exposed to a warm and moist, and to a more dry and cold atmosphere, are frequent subjects of rheumatic disease.

This point of the influence of temperature, however, and of

those conditions which are included under the term "weather" on the production of diseases of the eye, although they are very commonly referred to by authors, it is only in a general way; and, so far as I am aware, no attempt has been made to show to what extent changes of temperature influence the occurrence of such diseases. At my request the present house surgeon of the Royal Westminster Ophthalmic Hospital, Mr. Charles Little, undertook to extract from my notes all the cases of acute disease that came under my care in 1868, arranging them according to the months, and from them I have selected certain affections, which are given in the table on the next page.

I have also extracted from the reports of the Registrar-General the temperature and some other meteorological conditions present in the last year, and arranged them in the following table:

1868.

The mean Air Temp. of the Year was 10·9 (C. 51·6 F.) or 1·7 above the average. The air was unusually dry.

	Barometer	Temperature of the Air.			Relative Proportion.				Rain collect
		Mean daily range.	Mean for the Month.	Mean degree of humidity.	Wind.				
					N.	S.	E.	W.	in.
January .	29·74	8·6	37·2	86	8	5	8	10	4·19
February .	29·96	13·1	43·0	80	2	0	10	17	1·28
March . .	29·82	16·1	44·0	80	5	2	10	14	1·07
April . .	29·78	18·7	48·1	78	9	5	8	8	2·08
May . . .	29·84	24·4	57·3	74	3	8	12	8	1·61
June . . .	29·98	25·5	62·0	68	8	5	7	10	0·47
July . . .	29·89	26·3	67·5	63	12	5	6	8	1·06
August . .	29·73	20·1	63·6	73	3	6	11	11	2·61
September .	29·69	20·6	60·5	74	6	10	8	6	1·52
October .	29·79	16·7	47·9	88	5	4	9	13	2·59
November .	29·83	10·8	41·5	87	11	6	7	6	1·16
December .	29·37	9·4	46·0	90	1	4	14	12	5·45

Now, few as the data here supplied are, it is observable that if we divide the year into two periods, one extending from May to October inclusive, the other from November to April, the number

ACUTE DISEASES OF THE EYE OCCURRING AT ST. GEORGE'S AND THE ROYAL WESTMINSTER OPHTHALMIC HOSPITALS DURING 1868.
TOTAL NUMBER OF PATIENTS, 2,540.

	Total Number of Cases	January.		February.		March.		April.		May.		June.		July.		August.		Sept.		October.		Nov.		December.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Acute Conjunctivitis.	283	10	13	12	15	10	15	15	11	10	19	8	19	8	11	7	11	8	13	7	19	10	12	10	10
Phylctenular Conjunctivitis . . .	111	1	4	5	6	7	9	7	2	5	9	4	7	3	3	2	5	2	4	0	7	4	7	2	5
Catarrho-Rheumatic Conjuntivitis . .	143	0	2	7	8	9	3	5	1	8	7	7	3	6	5	10	6	8	11	10	6	7	4	8	2
Rheumatic Sclerotitis	71	6	3	2	1	1	1	1	2	3	8	1	3	1	7	4	4	2	5	2	4	2	4	2	2
Rheumatic Iritis . .	42	0	2	3	2	1	3	2	0	3	0	2	2	2	1	3	1	3	1	2	1	3	2	1	2

If we exclude the two first series, and add up the three last, which may be regarded as forming collectively the rheumatic affections of the eye, we obtain the following results:—

Rheumatic diseases of the Eye. . .	256	13	23	18	11	29	18	22	28	30	25	22	17

of rheumatic affections occurring in the former or summer months as compared with the latter, is in the proportion of 16·9, or very nearly double, whilst it will be seen that it is precisely in those months that the mean daily range of temperature is most considerable, though the mean temperature for the month is of course higher, whilst the mean degree of humidity is small; in other words, cold and wet weather does not *per se* augment the number of rheumatic affections, providing it be uniform; but such affections seem to be more numerous in proportion as the differences between the day and night temperatures are greater.

But passing from this, let us now proceed to the consideration of the treatment. I do not believe that any one plan will always prove effectual in curing the patient. A plan of treatment appropriate to the cure of any disease must always depend on a just appreciation by the surgeon of the various causes which have concurred to produce the disease, and of the conditions which are operating in maintaining it; when these are removed or subdued, the natural powers of the system will in general be sufficient to restore health. Hence in every case certain general measures must be adopted, without which special agents will produce but little effect. The three most important of these are, keeping the patient in a room of tolerably uniform temperature, attention to the diet, and to the state of the bowels. The comparative uniformity of temperature possessed by our large hospitals undoubtedly exercises a very beneficial influence on the process of cure in many of the diseases of the poor, and has scarcely been sufficiently recognized or dwelt upon by the advocates of such buildings, in opposition to small and temporary sheds; it is certain that it greatly aids other remedies in the cure of rheumatism. In regard to diet, looking at the general condition of the patients, I have usually ordered a moderate allowance of meat, with ℥iv of wine per diem, and bread and milk or porridge for breakfast and tea, but have always interdicted beer, which appears to exert the same influence on rheumatism as on gonorrhœa, with which every surgeon is familiar. In regard to purgatives, their value in the disordered condition of the bowels, so often present in the subjects of rheumatic disease, seems to have been generally acknowledged. I do not remember an instance where the exhibition of a brisk

purge was followed by ill effects, but I have seen many where a good purge has itself wrought considerable improvement. Patients of a lax fibre, pallid complexion, and engaged in sedentary pursuits, will often reply that their bowels are open once or twice a day, or even that they are rather relaxed; whilst if 5 grains of calomel be administered over night, and a black draught be taken in the morning, a quantity of hardened fæces and scybala will be got rid of, that occasions surprise to themselves, and materially facilitates the action of other remedies.

In cases where the inflammatory symptoms have been very severe, I have frequently directed the application of from one to six leeches on the temple before commencing the treatment with aconite and colchicum, the latter number always producing a powerful local, and sometimes a well-marked general, influence. And now when the patient has been placed under favourable hygienic conditions, with a cleared alimentary canal, and with the vessels locally relieved, the treatment with aconite and colchicum may be commenced in the majority of cases with every prospect of success. The doses I have usually employed have been three minims of the tincture of aconite and twenty minims of colchicum in an ounce of camphor mixture, repeated three or four times a day. In feeble patients, in women, and in children of from 10 to 14 years of age, the quantity of each tincture may be reduced to one-half; and when the water is, or has been high coloured, with deposits of the lithates, the bicarbonate and nitrate of potash with a little spirit of chloroform or of nitric acid may be advantageously added.

In many instances, and especially when the disease presents a periodic character, recurring with great regularity at a certain period of the night, the addition of two or three grains of quinine, or of a few minims of the liquor arsenicalis, may be made. The only two unpleasant symptoms I have ever observed have been nausea and sickness, probably produced by the colchicum, and tingling and numbness of the fingers proceeding from an overdose of the aconite. These, however, have been rare and exceptional inconveniences, and have in every instance promptly disappeared with the intermission of the medicine. When successful, the immediate and first perceived effect of the treatment is cessation of the pain, the patient as a consequence

sleeping throughout the night and awaking greatly refreshed on the following morning. The redness of the eye appears then gradually to diminish, the intolerance of light and lachrymation, if any be present, disappear, and the patient's appetite and health quickly return, nor have I noticed any particular tendency to relapse.

The *modus operandi* of aconite and colchicum it is difficult to explain. Do they act primarily on the heart, and by lowering its action diminish the *vis a tergo*, and thus allow the congested vessels time to relieve themselves? Or do they act on the smaller vessels through the vasomotor nerves, causing them to contract, and thus opposing an obstacle to the supply of blood to the inflamed part?

No reply can be obtained on these points even from our latest therapeutical authorities, but I can fully corroborate the statement made by Dr. Ringer in his recent "Handbook of Therapeutics," that if aconite succeed in subduing inflammation at all it will act with rapidity.

In conclusion I may just add that in some instances, when the pain has been very intense and has not yielded to the above measures, I have employed the subcutaneous injection of a solution of morphia with the best effect; and believe that when due care is taken in removing all impurities from the tube of the instrument, abscess, sloughing, or other unpleasant symptom is rarely produced.

THE VACCINATION QUESTION.

BY THE EDITOR.

Although this journal does not concern itself with what may be called the technical apparatus of hygiene in general, we can hardly ignore a matter so immediately connected with everyday medical practice as the discussion which has been recently raised respecting the proper mode of vaccination. Events have conspired, in rather an unusual manner, to raise difficulties about vaccination which may impress the public mind very unfavourably, and instead of producing a beneficial modification in the mode of procedure may discredit Jenner's great discovery itself; and certainly in a most undeserved way. We think it is important that an impartial view of the subject should be presented to the profession and the public, in order that questions may not be unfairly prejudged.

It may be well to point out the unusual circumstances under which the question of compulsory vaccination has been again brought under notice. The public mind, for the last two years, has been somewhat excited by the operation of the Amended Vaccination Act of 1867. That Act was in fact considerably more stringent in the direction of compulsion than anything which had preceded it, and it pressed with just sufficient severity on the few wrong-headed individuals who are on principle opposed to vaccination for their children, to give them the appearance of martyrdom. In the next place, the persistent agitation of the noisy clique of medicals and semi-medicals who have made it their business to oppose vaccination altogether, has gained more attention from the public in the last few years, simply because the feelings of the community have

lately been strongly awakened to the interest and importance of hygienic questions to the general welfare. Thirdly, there has occurred a great revival of the tendency to recur to animal vaccination, in consequence of the terror which was excited by a series of narratives, commencing with the celebrated Rivalta case, of the alleged transmission of syphilis by the medium of humanised vaccine. The reality of the danger of vaccino-syphilitic inoculation was admitted by no less a person than M. Depaul, the chief official inspector of vaccination in France, who thereupon took up and urged forward the practice of vaccination with lymph obtained from the heifer. The Belgian Academy has also (chiefly in consequence of the representations of M. Warlomont) adopted animal vaccination. And quite recently a physician in this country—Dr. Blanc, of Abyssian celebrity—has made strenuous efforts to promote the same system: efforts which, owing to his personal reputation, have attracted much public attention. Finally, to add to the general excitement, it has lately happened that more than one of those fatal instances of the effects of careless vaccination which do and almost necessarily must occasionally happen, have given rise to fresh conversation and remarks in the public journals. The wildest stories about the communication of infectious disorders by humanised lymph have been freely circulated, and there is really some danger that medical opinion may be falsely represented to the public eye as split into two hostile camps of nearly equal size and importance. Nothing could be further from the truth; and it is the purpose of the present paper to show how greatly the present difficulties and disputes have been exaggerated. It is most important that the public should not be led falsely to suppose that the fundamental facts of Jenner's discovery have been put seriously in doubt by anything which has occurred; for with such a belief the laity might not unnaturally take the whole matter into their own hands, with results of which it is not easy to estimate the disastrous character.

Let it be distinctly understood, that it is no part of our purpose to prejudge the feasibility or the value of recurrence to animal vaccination *per se*. But it is absolutely necessary to protest against that part of the arguments for the general intro-

duction of this system, which consists in the attribution of all manner of evils to the process of vaccination with humanised lymph. Two specific allegations are being made, either of which would be most grave if true, and the united weight of which quite naturally moves the public (which believes that there is really respectable medical evidence to their truth) to a very serious agitation and excitement against compulsory enforcement of the existing system. It is in the first place said that the lymph which has passed through several generations of human beings has lost, in great measure, its protective character against small-pox. And secondly it is confidently alleged that vaccine matter accidentally taken from diseased persons can convey serious infective disorders to persons in whose skin it is inserted, and in particular that that most dangerous and repulsive disease, constitutional syphilis, is especially liable to be conveyed in this manner. We regret to see that, owing to the supineness of the great mass of the profession, these rumours have been allowed to spread unchecked, till even the most sensible people are becoming thoroughly frightened. There is no lay journal which habitually exercises so much care, moderation, and judgment in speaking of medical matters which interest the public as the *Spectator;* yet that paper has lately inserted some remarks which show that it believes medical opinion to be really in favour of the idea that the protective power of lymph does fatally degenerate by transmission through the human body. And as an instance of the way in which the alarm of infective contamination is taking hold on private individuals of high cultivation and ability, we may notice a letter from Mr. Francis Newman, in which he joins the Anti-Compulsory Vaccination League, expressly because he believes that syphilis and other contagious disorders can be transmitted by vaccination. It is fully time that a simple statement of the facts really known should be put forward; for nothing could be more mortifying and disastrous than an interference with the practical working of compulsory legislation which should afterwards prove to have been based on false alarms.

I. As regards the statement that the protective influence of lymph which has passed through repeated human inoculations is weakened, we must say that it is to us impossible to understand

how medical men of intelligence can believe that the evidence on record goes to establish this. There is, of course, one obvious blunder into which it is possible to fall in arguing about this question; the error, namely, of forgetting that lymph, like anything else, may be spoiled by thoroughly ignorant handling. Dr. Jenner himself pointed out the possibility, and indeed facility, of degeneration in consequence of transmission through *unselected subjects;* and every vaccinator of large experience has reiterated the caution. But the case is utterly different with the well-known lymph-stocks which are obtained from the National Institution, and many of which are directly descended from Jenner's original lymph, having never passed through any but human systems during all that number of years. This lymph, which is accessible to all, is so far from having shown any, even the faintest traces of a degenerative tendency, that on a recent occasion it produced the following most striking and wonderful results. At five vaccination stations in London, Liverpool, and Birmingham, 446 punctures were made, with lancets armed with this lymph. The result was, the production of 443 typical and perfect vesicles, of such a character as has always been found to ensure complete protection. It is impossible to imagine a success more near to the absolute; unless we could suppose that these very vesicles only represented an imperfect and not completely protecting vaccinia. But the reporter of these cases was no less a person than Dr. Seaton, whose experience in vaccination is enormous, and he considers that they were of the typical kind for the purpose of protecting from small-pox infection. There is, however, a much more direct proof on the subject, to be derived from the remarkable experience of the Small-pox Hospital in regard to the immunity of the nurses of that institution. Among these officials (who had of course been carefully and officially vaccinated) *not one instance occurred, during thirty years of a contagion received from inmates of the hospital,* upon whom they were constantly attending. Yet these persons were vaccinated, doubtless, with lymph which was far enough in its descent from the cow. We might easily multiply, indefinitely, our citations of exact and precise instances going to prove the efficacy of good and carefully selected humanised lymph, however distant in genealogy, from

the original cow, to produce the maximum of protective effects against small-pox. But to our mind the two instances above quoted are alone sufficient to carry conviction.

We had written thus far, and were about to take up the consideration of the objections urged by the one adverse authority who, in our opinion, is really entitled to be listened to with a high degree of respect. Mr. Marson, of the Small-pox Hospital, in his very able article on Small-pox (Reynold's "System of Medicine," vol. i.), intimates his opinion that the continuous humanisation of lymph does sometimes tend to deteriorate its protective powers and to render advisable the recurrence, in such cases, to good stocks of cow-lymph. We confess that we are unable to see how Mr. Marson has convinced himself of this fact, and he certainly gives no detail proofs of it. But the mere *ipse dixit* of so experienced and thoroughly honest an observer is entitled to a high degree of consideration, and we are content to suppose that for the above opinion he had further grounds of which we are ignorant. But our attention has been directed afresh to the original statements of Mr. Marson by the perusal of a pamphlet which has just come under our eye. Dr. Blanc, whose efforts on behalf of animal vaccination have been already referred to, has published the text of a paper[1] read by him at the recent meeting of the British Association at Exeter. In this pamphlet he urges the two capital charges against humanised lymph—that it has lost much of its protective power, and that it can communicate other infections. Now the manner in which Dr. Blanc deals with the statements of Mr. Marson is so remarkable as to demand serious attention. When it is remembered that the paper in question was read before one of the principal learned societies in England, we are at a loss to express our astonishment at the temerity, or else the complete incapacity for appreciating the elements of statistics, which it displays.

Dr. Blanc produces a great show of figures, which are intended to prove the degeneracy of humanised lymph in a triple manner. In the first place he remarks that the admissions, in successive periods of years, of patients to the Small-pox Hos-

1 "Compulsory Vaccination: An Inquiry into the present unsatisfactory Condition of Vaccine Lymph, and a Remedy proposed." By H. Blanc, M.D., &c. London: Churchill. 1869.

pital, show a constant increase in the proportion of post-vaccinal small-pox to cases of small-pox in the unvaccinated. He is, in fact, quoting Marson's figures when he says that in 1819 only 19 post-vaccinal cases were admitted to the hospital; whereas in the eleven years, 1855–65, 5,622, or 84 per cent. of the total cases admitted, were post-vaccinal. How Marson attributes this inversion of the relative proportions of post-vaccinal and non-vaccinated cases simply to the increased spread of vaccination; but Dr. Blanc omits to quote this opinion, and indeed constantly cites Mr. Marson as a witness altogether on his own side; and merely mentions the increased spread of vaccination (along with the increase of population, which could not possibly have had anything to do with the change in question!) as a partial and limited cause of the increased proportion of post-vaccinal small-pox. This is pretty well, but there is more to come. At page 18 Dr. Blanc actually represents the foregoing facts as follows:—"From perfect immunity in those inoculated with spontaneous cow-pox, we pass from a few rare cases of subsequent small-pox to a small per centage, gradually but steadily increasing, until in 1864 it reached the very high average of 84 per cent."! Comment on this peculiar manipulation of facts is needless; nor have we come to the worst. On page 21 Dr. Blanc specifies the respective numbers of post-vaccinal cases of small-pox at the hospital, and the respective rates of mortality among them, over the periods already named. He winds up with the eleven years 1855—65, in which he shows the mortality among the 5,622 post-vaccinal cases to have been 459; he then remarks:—"If now we take this last number, '459' representing the fatality in the London Small-pox Hospital, from 1855 to 1865, among the vaccinated, and compare it with '528, representing in the same establishment and during the same period of time, the fatality among the unvaccinated, it gives for the vaccinated a mortality of *only* 69 *less than for the unvaccinated.*'" [The italics are ours.] It is almost inconceivable that Dr. Blanc should have written the last paragraph, cooly ignoring, as it does, the fact that the "528" fatal cases in unvaccinated persons, occurred among a total number only one-fourth as large as the number of post-vaccinal cases! We are sorry to speak severely of Dr. Blanc, from whom, indeed, we

had hoped for better things. But it is the duty of scientific journalists to condemn such statements as the above, made with regard to a question of the greatest national importance, in the strongest terms.

But we have not yet done with this author. He invokes Jenner as an advocate of the doctrine that original cow-pox is an *absolute* preservative against small-pox. It is true that certain isolated passages in Jenner's early correspondence may be strained to bear this meaning. But if Dr. Blanc has anything better than the most superficial acquaintance with Jenner's opinions, he must know that on an occasion when that great observer formally delivered his mind he expressly repudiated the idea above quoted. Jenner says in the clearest manner, that he never expected vaccination (and here he is certainly speaking of the natural and the artificial process on equal terms) to afford more protection than small-pox itself; and *that* he well knew gave no absolute immunity. But to represent Jenner as an authority for the idea that spontaneous cow-pox is more permanently protective than humanised cow-pox is not merely to exaggerate, it is to absolutely reverse the whole sense of his teaching. His life was consecrated to experimentation on the permanence of protection afforded by humanised lymph, and his final opinions were more strongly affirmative of that permanence that he had dared to hope they would be.

One more word, and we have done with Dr. Blanc. Throughout the recent discussion, and especially in his latest brochure, he has urged the fact of the greater local *inflammatory disturbance* produced by inoculation from the heifer, as a proof that the protective efficiency of that operation is greater than that of vaccination with humanised lymph. He is here committing a blunder for which we admit he has the excuse of merely copying a physician who ought to have known better—M. Depaul, of the French Academy. It is a fallacy exploded years since, a blunder which was recognized quite early in Jenner's investigations. The local inflammatory process, so far from being directly proportioned to the true development of the vaccine vesicle, is an unhappy accident, any considerable development of which tends seriously to interfere with the essential infective process; and we venture to say that there are scores of country

doctors' apprentices, scattered about this country, who could have certified Messrs. Depaul and Blanc of that fact from their own experience. The typical vaccine vesicle, from which an experienced vaccinator would hope to get the best results, never develops an areola of more than medium size, and above all things it is never surrounded with a large and *dense* ring of induration. So that the very argument which Dr. Blanc urges in favour of the superior value of heifer vaccination is a distinct and serious objection to it! But enough of Dr. Blanc for the present.

The truth is, that the question as to the practicability of procuring general protection to the population, against small-pox infection, will have to be fought out upon a different ground. That the prolonged transmission of lymph through the human subject is *per se*, a cause of its deterioration, was denied by Jenner (after twenty-five years' careful watching of the effects of his system), and has been denied in the most recent times by a large majority of those authorities whose experience has been of first-rate magnitude. What is of even more consequence is, that it has been denied in the most emphatic way by men like Mr. Ceely and Dr. Sanderson, who have assiduously studied the disease as produced by direct inoculation from the cow. We take it that there seldom was a fact better established in medicine than this, that, given (*a*) a certain amount of skill in the vaccinator, and (*b*) lymph derived from a stock which has been carefully passed through healthy and susceptible individuals, as perfectly satisfactory results can be obtained from the oldest stocks of lymph as from the youngest, or from the cow itself. The real question—and in common honesty the profession ought not to shirk it—is, whether the whole blame of such failures in protection as occur, does not rest with the vaccinator, in regard either to his defective skill in performing the operation, or to his negligence in the selection or the storing of lymph. Until quite lately it seemed as if there would be no need to institute such an inquiry. The following table speaks for itself; we quote it from Dr. Seaton's admirable work on Vaccination (Macmillan & Co., 1868):—

Periods compared.	Annual Deaths by Small-pox in England and Wales.	Annual Rate per million of the Population.
1. Average of 30 years previous to introduction of Vaccination, estimated by Dr. Lettsom and Sir Gilbert Blane	—	3,000
2. Average of three years (1838–40[1]) when Vaccination had become to a great extent diffused, but before any public provision was made for its gratuitous performance	11,944	770
3. Average of nine[2] of the years (1841–43) when Vaccination was gratuitously provided, but was not obligatory	5,221	304
4. Average of the ten years (1854–63) during which Vaccination has been to a certain extent obligatory	3,351	171

Nothing could be clearer, apparently, than the inference that more compulsion was the only thing needed to utterly eradicate small-pox from the country. To all except a mere fraction of the educated classes—a fraction whose general intellectual status may be briefly described as being about on the level of table-turning and mesmerism—it seemed an accepted fact that nothing save the want of an efficient machinery for compelling every one to have his children vaccinated at a proper age was hindering the complete extinction of small-pox. Of late years, however, several causes have conspired to diminish this feeling of confidence.

1. The practice of *revaccination* has proved to be much more extensively necessary than Jenner originally supposed; for whereas he believed that this was only needful where the original vaccination had not run a *regular course,* it is now stated by the best authorities that revaccination is also required (*a*) in cases where, although the course of the orginal infection was regular, the amount of it was small; and (*b*) in a small indeterminate number of persons whose primary vaccination was both regular and sufficient, but in whom the protective effect of vaccination

1 The present system of registering deaths only commenced in 1837.

2 During the years 1843–46 causes of death were not distinguished in the Reports of the Registrar-General.

tends to wear out more rapidly than it does in the majority of mankind. And as both these contingencies are such as it is extremely difficult to predicate the non-existence of in any particular case, the natural deduction has been that the practice of a revaccination should be the rule, more especially when the danger of small-pox infection is immediately present. The declared opponents of vaccination have always quoted this admission of the desirability of revaccination as a proof that the Jennerian theory of protection was unfounded; and now we find the fact being brought forward as an argument by those who do, indeed, believe in the protective power of vaccination, but who assert the degeneration of humanised lymph and the necessity of recurring to direct vaccination from the cow. 2. Several rather severe epidemics of small-pox, which have occurred both in England and on the Continent within the last few years, have further disturbed men's minds. 3. The greatly increased attention which is everywhere directed, at the present time, to questions affecting the public health, has made people forget the triviality of these outbreaks in comparison with the terrible frequency and fatality of small-pox epidemics in the days when vaccination was non-existent or but little diffused.

For our own part we maintain that there is still as much protection as there ever was from vaccination with humanised lymph, *when this is properly performed*. The reasons which induce us to believe that carelessness and ignorance are the essential causes of failure are very strong, but they can be more completely summed up after the discussion of the second part of our subject—the alleged transmissibility of infectious disorders by the medium of humanised vaccine. That question, however, will require more space than we can now afford, and must be taken up in our next number.

(*To be continued.*)

Reviews.

Das Chloral Hydrat, ein neues Hypnoticum und Anœstheticum, und dessen Anwendung in der Medicin. Eine Arzneimittel-untersuchung. Von Dr. Oscar Liebreich. Berlin: G. F. O. Müller's Verlag. 1869.

Hydrate of Chloral, a new Hypnotic and Anœsthetic. By Dr. O. Liebreich. London: Williams and Norgate. Price 2*s*.

Experiments with Chloral. By M. Demarquay. Reported in *Lancet*, Sept. 25.

Report on the Physiological Action of Hydrate of Chloral. By Dr. Richardson (at the British Association Meeting.) *Medical Times and Gazette*, Sept. 4.

The discovery of the medicinal qualities of hydrate of chloral is a very important fact. Many things are yet *sub judice* as to its physiological effects, but there can be no doubt, we think, that it will prove a valuable addition to the Materia Medica. It must be admitted, however, that upon the very threshold of the inquiry certain remarkable discrepancies of observation between physiologists of acknowledged ability have arisen, and will require immediate reconsideration. Briefly described, the position of affairs is this: Dr. Liebreich states that hydrate of chloral, administered by the stomach or subcutaneously, becomes decomposed by the free alkali of the blood, with the effect that chloroform is liberated within the body, and that the chloroform thus gradually set free acts, above all things, as a *hypnotic;* but when large doses are given, a prolonged *anæsthetic* effect is produced. Dr. Liebreich experimented on frogs, rabbits, dogs, and human beings. Dr. Richardson resumed the inquiry, and experimented on pigeons, rabbits, and frogs. He confirms the statement that the blood decomposes hydrate of chloral with evolution of chloroform. He also confirms, on the whole, the results obtained by Liebreich as to the production of sleep, and, with large doses, of prolonged insensibility. But as regards *anæsthesia*, he makes the important remark that in rabbits the period of actual anæsthesia is short, and is succeeded by a condition of actual *hyperæsthesia* of the skin.

Richardson made a number of comparative experiments with other anæsthetic agents; but the point of greatest interest brought out in his results is that the *subcutaneous injection of chloroform*, in efficient dose, leads to as perfect and prolonged narcotism as the hydrate of chloral, with an absence of other symptoms which the latter produces (convulsive tremors, difficult and fluctuating recovery.) It must be at once remarked here, that this description of the effects of the subcutaneous injection of chloroform will be a surprise to many practical experimenters. Lallemand, Duroy, and Perrin stated that chloroform subcutaneously injected produced only local irritation, and no general anæsthetic effect. But as Charles Hunter and others had recommended this method of using chloroform for neuralgic and other painful disorders, we have personally tried its effects. In the solitary instance where we administered it to a human subject, violent local irritation and a small abscess were the only results; and we have heard the same story from several other practitioners. We repeated the experiment on several dogs, with similar results. However, the authority of Dr. Richardson will, of course, make a further investigation of the subject absolutely necessary.

M. Demarquay's investigations led him to very different conclusions from those of Liebreich. He experimented on rabbits, and, so far from observing any anæsthetic state, he found that these animals, though thrown into a most perfect sleep, were in a condition of *exquisite hyperæsthesia*. For this reason, and also because he found the breath of the animals distinctly impregnated with the peculiar odour of chloral, M. Demarquay disbelieves the asserted decomposition in the blood, and liberation of chloroform. He observed a remarkable injection of vessels, similar to that observed in section of the sympathetic. He found a diminution of temperature (after strong doses) of from half to one degree (Centg.) [Dr. Richardson finds a much greater difference of temperature, as much as 6° Fahr.] M. Demarquay concludes that the question of chloral involves many physiological problems which require to be carefully studied before the applications of chloral are determined, and the substance is used at the bedside of the patient.

Having given this general *résumé* of the agreements and differences between M. Liebreich and his critics, we must revert to the treatise of the former, which, whether right or wrong, is much too solid a piece of work to be lightly set aside. We wish to reserve our opinion entirely, as we hope to experiment afresh on the whole subject. But it is only just to M. Liebreich to expound his views with something like completeness, for his pamphlet is much more than the record of experiments upon one particular physiological agent. The question between him

and Demarquay is particularly important. The evolution of chloroform within the circulation (as a result of the decomposition of chloral by the free alkali of the blood) which Liebreich asserts and Demarquay denies, would be most important if it were true (and be it remarked that Dr. Richardson confirms it); and it would also be interesting as a remarkable instance of the verification of pure chemical theory in physiological experiment. Dr. Liebreich points to his discovery, and to the parallel case of the purely chemical discovery (by Matthiessen and Wright) of the new therapeutic agent, apomorphia, as indications that the "search for remedies, including the chemical investigation of medicines and of the animal organism, must take its commencement from the retort." The challenge is notable; and the critic is bound to follow the author upon his own lines, in order to judge fairly how far he makes good his case. Some condensation, however, is absolutely necessary; and we have no space here for the reasons which we should otherwise advance against what we consider the too purely chemical arguments of the author against such researches as those of Professor Binz on the action of quinine. But apart from this and kindred subjects there is plenty of matter for consideration in Liebreich's treatise.

Chloral (C_2 H Cl_3 OH) may be obtained either by the method of Liebig or by that of Städeler; the former is preferred by Liebreich, as yielding a larger result than the other. (It must be understood however, that at best the preparation of chloral is difficult, so much so that we fear the supply must, for some time to come, be limited.) The process of Leibig consists in passing chlorine gas through absolute alcohol to saturation, which is evinced by the cessation of development of hydrochloric acid, and the passage of chlorine unchanged, even when heat is applied. The crude chloral is treated with concentrated sulphuric acid, and the product, which boils at 201° Fahr., is collected. Agitated for a time with concentrated sulphuric acid, the chloral passes into the insoluble form, but on heating it again assumes the soluble form; it is a thin fluid of sp. gr. 1502. When mixed with water it develops much heat and assumes the shape of the white crystalline hydrate (C_2 H $Cl_3O + H_2O$), which sublimes unchanged on the application of slight heat. The crystals are easily soluble in water; they exhale a smell which, but for its pungency, would exactly resemble that of melons. The aqueous solution, treated with a free alkali, clouds at once, and resolves into formiate of the alkali, and pure chloroform: the latter falls to the bottom. This is the change which Liebreich expected to occur in the blood of animals to which the hydrate of chloral had been given; and he made the forecast that, as the process of decomposition would necessarily

be gradual, the primary irritative effects so often produced by chloroform, when given in the ordinary manner, would not occur; while on the other hand the anæsthesia would be prolonged.

After reading carefully through the threefold series of experiments by Leibreich—chemical, physiological, and therapeutical—we must confess that the weight of evidence, especially taking into account Dr. Richardson's further researches, seems strongly in favour of the belief that chloroform, liberated by the free alkali of the blood, is the cause of the physiological phenomena. It seems quite certain that the smaller doses of hydrate of chloral produce sleep, and that the larger doses produce a semi-comatose condition, shading by imperceptible degrees into true anæsthetic narcosis. It is impossible to overlook the fact that, in severe and fatal cases of the action of the drug, the same successive order of paralysation of the various nerve centres occurs as in the case of chloroform. The main difficulty that remains is raised by the observation of Demarquay as to the occurrence of hyperæsthesia. But not to dwell on the fact that Dr. Richardson admits a transient stage of true anæsthesia, we would ask our readers to consider what is the true significance of hyperæsthesia, during a partially paralytic condition. Certain it is, that in a variety of conditions of depressed inervation, hypersensitiveness of the "endorgans" of the nervous system occurs as a transitional state between full vital activity and paralytic death. The occurrence of the so-called "hyperæsthetic" state may, therefore, be an unfortunate accident, tending to invalidate the practical utility of chloral as an anæsthetic for surgical operative purposes; yet it does not afford any satisfactory disproof of the general stimulant-narcotic character of the action of this substance. Abundant evidence is given, on the contrary, in the treatise of Liebreich, that moderate doses—about twenty-three grains subcutaneously injected—have an admirable effect in producing sleep in states of restless delirium. And in spite of the negative evidence of Demarquay, one can hardly doubt that larger doses do produce true paralytic narcosis, which, if carried far enough, ends in death, first of the lungs and then of the heart. The exceedingly regular and uniform *hypnotic* effect of *moderate* doses is not only not denied, but is expressly asserted, by Demarquay. The whole evidence seems fully to justify the practical utility of the following formulæ, which are given by Liebreich at the end of his pamphlet:—

1. ℞. Hydrat. Chloral. gr. 38; Aq. dest., Mucil. gumm. arab. āā ʒ ss. Make a draught. To be taken as an ordinary hypnotic.

2. ℞. Hyd. Chloral. gr. 62; Aq. dest., Syr. Aurant., āā ʒ ss. Mix. One dessert-spoonful to be taken at bedtime.

3. ℞. Hyd. Chloral. gr. 70 ad 130; Aq. dest., Syr. Aurant., āā ʒ ss. A draught to be given in delirium tremens.

4. ℞. Hyd. Chloral. gr. 31; Aq.dest. ʒ v.; Syr. Aurant., Mucil. gummi āā ʒ ss. Mix. A dessert-spoonful to be taken every hour (sedative).

5. ℞. Hyd. Chloral. gr. 80; Aq. dest. ʒ ij. ♏36. Mix. A teaspoonful in a glass of wine, beer, or lemonade, as a hypnotic.

6. Hyd. Chloral. gr. 80; dissolve in sufficient water to make 10 cubic centimetres (160 minims), 15 to 60 minims to be injected subcutaneously as a hypnotic.

These formulæ must of course be taken subject to further experience, as the author himself freely admits. But it seems to us that they promise particularly well. Especially with regard to the treatment of delirium tremens and maniacal delirium, we would remark, that there seems a great probability that chloral may become a very valuable remedy. In both these pathological conditions there are many *à priori* arguments in favour of the use of chloroform; and even in its ordinary mode of application the like remedy has sometimes proved very effective. But there is always an element of uncertainty and danger in the employment of chloroform by inhalation, because a very slight error in the mode of administration may quickly produce paralysis of the heart, which is instantly fatal; while, on the other hand, the administration of chloroform by the stomach is uncertain and unreliable, even when it is not dangerous. But the slow evolution of chloroform within the blood-vessels (supposing, as we do, that this is sufficiently demonstrated) might well be expected to produce all the sedative and hypnotic effects of the remedy, without any of the dangerous effects upon the heart which are the *bête noire* of chloroformists.

As we have already remarked, however, it is not merely the immediate practical results to be derived (as it is hoped) from Liebreich's research that gives it its peculiar interest. In the able introduction to his work, the author lays down certain fundamental principles of therapeutical research, which, whether they be ultimately accepted or not, may well give rise to serious reflections. He complains that ordinary observers habitually make the mistake of attempting to trace through the organism the action of substances, of whose behaviour within the body we know no more than is shown to us by the final products of decomposition as they appear in the excretions, and which are in fact only the last term of a series of changes of which we know none of the primary stages. Doubtless this is true; and indeed Liebreich himself offers a striking illustration of this statement. He names as the most promising subjects for therapeutical investigation the actions of aldehyde, of alcohol, and of acetic acid upon the body. But to take the case of alcohol only, how various and how conflicting are the theories of its physiological action which have been propounded! It is only quite

recently, after many a hard-fought fight, that we have been enabled to assert positively that alcohol is oxidized within the body; and even now those who know most of the question would hesitate to state positively that alcohol and its congeners "zu den End-produkten oxydirt zerfallen;" for in truth none of the products of its decomposition have been clearly traced and identified, though their existence, in some shape or other, is rendered certain by a multitude of considerations. Be this as it may, however, it is impossible not to feel a genuine admiration for the stroke of genius which is indicated in the prediction beforehand, from purely chemical considerations, that chloral would yield up chloroform to the blood in precisely the form in which it might be expected to work the maximum of good and the minimum of mischief. We heartily recommend our readers to study the research of Liebreich, not in secondhand quotations, but in the original. And we shall look forward with eager expectation to the author's fulfilment of his promise to follow up his latest investigations by an inquiry into the action of the kindred trichloracetic acid and its salts.

A number of reviews are unavoidably postponed from the pressure on our space.—Ed. Practitioner.

Clinic of the Month.

On the Treatment of Scurvy.—Dr. Duckworth remarks that there is only one disease of which it may be truly said that we know, not only its exact cause, but its certain remedy, and that consequently it deserves more attentive consideration than it usually obtains. He describes a case of land scurvy, now rarely met with, occurring in a blacksmith, aged 49, from Buckinghamshire. The treatment which proved successful was as follows: He was ordered full doses of chlorate of potash in decoction of bark, with a diet of eggs, beef-tea, and milk, cabbage for dinner, and fresh lemonade as a drink. Some port wine was also given. As no marked effect on the gums followed the use of chlorate of potash, they were ordered to be rubbed twice a week with solid nitrate of silver, in accordance with a plan found effectual by Dr. Buzzard, and recommended by him in his article on Scurvy in Reynolds's "System of Medicine." This seemed to prove of considerable service, and the man became able to chew soft food again. The vibices faded away and the joints became supple. He was next put on steel mixture. At the end of twenty days of hospital treatment he was rapidly improving. (See *Lancet*, Aug. 28, 1869.)

Camphor in Albuminuria.—In a paper with this heading Dr. Osbaldeston calls attention to the beneficial effects produced by this drug in cases of albuminuria arising from various causes. One of his cases was the subject of scarlet fever with severe affection of the throat, and typhoid fever. Chlorate of potash, chloric ether, and dilute hydrochloric acid were administered in camphor mixture with some advantage, but on the ninth night convulsions set in of a severe character. A blister was applied to the nape of the neck, and the following mixture ordered:—Camphor, half a drachm; chloric ether, one drachm; compound tragacanth powder, one drachm; peppermint water to eight ounces; a sixth part to be taken every two hours. At the time of commencing this medicine three-fourths of the quantity of urine tested was solid albumen, but in the course of the fourth day it had fallen to one-half, on the fifth day to one-fourth, and on the seventh day it had entirely disappeared, whilst there had been no return of the convulsions. The

quantity of camphor administered was reduced to one-half on the third day. Iron and calumba were subsequently given, and the patient recovered. In a second case, in which the albuminuria accompanied erysipelas of the head and face, and was attended with convulsions, similar treatment promptly reduced the amount of albumen present, and being followed by the administration of steel gradually restored the patient to health. In a third case the albuminuria accompanied synovitis of one knee-joint, and a similar treatment was followed by like results. It is just noticeable that in all these cases large blisters were applied, and it is possible that the albuminuria was the result of the absorption of the essential principle of the fly, and that with the cessation of the blistering the albumen in the urine gradually disappeared. (See *Lancet,* Aug. 28, 1869.)

Treatment of Abscess of the Liver.—Dr. H. Blanc records a series of cases of this disease in which successful results were obtained by the application of caustic issues, made with Vienna paste, over the region of the liver. In three of them the abscess burst through the lungs, and in one instance several successive abscesses formed in the substance of the liver. The men were all weak and debilitated, all of them having either suffered formerly from hepatic disease, or just recovered from some serious illness—all consequently cases very unfavourable for absorption to take place. Nevertheless that result was obtained. Diuretics, mineral acids, tonics, &c., were generally employed as useful auxiliaries, and care was taken to support the strength of the patients by a generous diet. He gives the following details of the preparation of the Vienna paste, its mode of application, and the ulterior treatment of the cauterized integuments. The Vienna paste, "potassa cum calce," P. L., is composed of caustic potash, ʒ iss ; quicklime, ʒ ij ; mixed together whilst warm, and kept in a well-stoppered phial. To use the powder a few drops of alcohol are added to the quantity intended to be employed, and made into a moderately soft paste. As soon as made the paste should be applied by means of a small spatula or blunt knife. Each application should be of the size of a shilling, and of about three times the thickness of that coin. The paste should always be applied to the intercostal spaces under the false ribs, or on the epigastrium, as the case may require, but never on the ribs themselves ; the application should be allowed to remain for fifteen minutes. When it is taken off, the surface must be gently washed with tepid water acidulated with vinegar. A warm linseed poultice, renewed every second hour, should be placed over the issues for the next twenty-four hours, after which square pieces of adhesive plaster, cut in the shape of a Maltese cross, should be applied over them, and renewed every morning.

If, however, a more rapid action be required, the poultice should be continued for several days. In from ten to fifteen days after the application the eschar falls off, and the granulations rapidly reach the surrounding integument. The granulations must be cauterized with nitrate of silver, early and daily, otherwise they have a tendency to prostrate. (See *Lancet*, Sept. 4, 1869.)

The Antiseptic Cerecloth as a Covering for Wounds. In a paper read before the surgical section at the annual meeting of the British Medical Association at Leeds, Mr. Lund called the attention of the profession to a novel kind of dressing for wounds, consisting of cloth or thin calico saturated with waxy matter in the form of solid paraffin, to which are added a little oil and wax with carbolic acid in certain proportions. Mr. Lund claims for this cloth the double property that, when placed over a wound, ulcer, or the opening of an abscess, it not only serves to exclude the air as an impervious dressing to the part, but it constantly emits from its surface the vapour of carbolic acid, as it is disengaged by the heat of the body, and so forms an antiseptic atmosphere around the wound. It is made of three degrees of strength, containing one-fourth, one-sixth, and one-eighth of carbolic acid. The strongest quality is needed in the management of the early stages of a wound. The others are more useful while cicatrization is going on. To illustrate how effectually the vapour of carbolic acid thrown off from this cerecloth at ordinary temperatures will prevent putrefaction, Mr. Lund placed some pieces of fresh meat in several wire cages of a cubical form, covering each with the cerecloth and fixing it loosely round by an india-rubber band. This was done on the 12th of June, 1869, and again on the 23d of the same month, and on opening one of the packets in the last week in July the piece of meat was found to have remained unchanged so far as putrefaction was concerned; although, from the time it had been kept in a warm room, it was quite dry and hard; other portions not so protected, but otherwise exposed to the same condition, had become putrid in nine days. (See *British Medical Journal*, Sept. 4, 1869.)

Treatment of Organic Stricture of the Urethra by Rupture.—In a paper communicated to the *British Medical Journal* Dr. Macleod gives the details of his experience with, and speaks in the highest terms of Mr. Holt's modification of Perrève's instrument, and observes that Mr. Holt has not overstated his case when he terms his method facile, speedy, prompt in its effects, and free from danger. Dr Macleod found that in many of the cases of stricture coming to him in private practice the dilator could at once be introduced almost without any precautionary measures; but that in many hospital cases of long

standing, when there were long, hard, and often multiple contractions with perinæal fistula, occurring in feeble and irritable patients, any interference at once produced the most violent urethral fever, followed by the most intense prostration, and it was only by perseverence and caution that any real progress could be sought for. In such cases he recommends confining the patients to bed for some days; attention to the bowels; examination of the urine in case of albumen or pus being present; careful regiminal treatment, with abundant mucilaginous drinks to dilute the urine; hot hip baths at night, and finally, after clearing out the bowels on the morning of the operation, the injection of half a grain of acetate of morphia into the perinæum, and the administration of chloroform. In some cases quinine may be given for some days in anticipation of the operation, and an opiate repeated a few hours afterwards with some hot brandy and water, which will prevent in all probability the supervention of prostration and rigors. (See *British Medical Journal*, Sept. 18.)

Sleeplessness in Infants.—In a paper devoted to this subject, Dr. Eustace Smith enumerates the following causes:—Acute diseases; hunger; injudicious feeding; cold feet; hereditary syphilis; worms; habit; and exhaustion of nerve-force. The treatment of all of these conditions is obvious enough, and we only extract them as they may possibly be suggestive. (Ibid, August 28.)

Treatment of Cancrum Oris.—After giving a description of the symptomatology and ætiology of the disease, Dr. Glynn observes that in its treatment the local application of the actual cautery, or of strong corrosives, has always been recommended, in order—1. To thoroughly disinfect the surface by destroying all dead matter; 2. To check the spread of the gangrene by destroying adjacent lesion; 3. To excite by stimulation a more healthy inflammation. Dr· Glynn is of opinion, however, that before applying escharotics, the general condition of the patient should be consulted; for if the patient be in a low and typhoid state, the caustic treatment could only be productive of evil by irritating, and could not excite healthy inflammation. Nitric acid might be of great service at the commencement, or when there was not much depression, but its repeated application, as recommended by some, would only be productive of evil. By the use of powerful antiseptics discovered at the present day, all dead matter could be thoroughly removed from the diseased surface. The modern constitutional treatment is by tonics and by stimulants. Dr. Glynn has met with cases which were successfully treated by the use of chlorate of potash wash, and the administration internally of ammonia, chlorate of potash, and bark, with

beef-tea, wine, and brandy. In one case two relapses occurred; one from exposure whilst a dressing was being removed, and on another occasion after the removal of necrosed bone. (See *Brit. Journ. of Dental Science.*)

Treatment of Scabies.—Mr. Jonathan Hutchinson, in his "Norwegian Notes," states that there were a great many cases of scabies in the hospital at Bergen, where the cure of the disease seemed to constitute a sort of specialty. Dr. Holmboes' treatment is as follows:—The patient is first put into a warm bath, and is afterwards well rubbed with the tar and soap ointment (equal parts of common tar and green soap.) The inunction is repeated two or three times a day, and the cure rarely takes more than a few days. Sometimes troublesome eruptions remain afterwards, and in a few cases it is found requisite to resort to sulphur. The same plan is adopted both for young and old. (See *Medical Times and Gazette*, August 28.)

Therapeutical Value of the Sulphites.—In a valuable paper on this subject Dr. Miller gives the results of his extensive experience at Dundee, on the effects of the sulphites in typhus, comprising no less than 884 cases, of which 161 were treated with the sulphites, and the remainder without. He shows that the total mortality presented the same ratio in both. The sulphites appear to have produced no effect whatever upon the issue of the cases, either favourable or the reverse. Neither during the progress of those cases which recovered under its employment was there any amelioration perceptible in the concomitant symptoms and complications; nor in those cases in which the range of the temperature was regularly noted by means of the thermometer was any effect observable, either as regards the degree of elevation of temperature, or the period of the case at which the defervescence was complete. The facts elicited, he thinks, abundantly prove the uselessness of annoying such patients with a disagreeable draught, for the taste is sufficiently nauseous. In cases of purulent infection or septicæmia, on the other hand, such as are common enough in midwifery practice, they possess a great value. They may be employed with advantage, for instance, in cases of abortion, in which the ovum has been imperfectly expelled, and in which portions of the placenta are left adherent to the uterus, which shortly become putrid. Also in cases of adherent placenta under these circumstances, the woman may be placed on half-drachm doses of the sulphite of magnesia, every fourth hour. To be of any avail Dr. Miller believes the remedy must be given in considerable doses, from half a drachm to a drachm every fourth or sixth hour; and still more that its use must be commenced early in the case, either before or immediately on the appearance of the

constitutional symptoms. (See *Edinburgh Medical Journal*, Sept. 1869.)

Treatment of Pruritus Pudendi.—Every one knows how distressing and how obstinate this complaint is. A thousand different remedies have been suggested for this dermic neuralgia, whether accompanied with papules or not. In treating of this subject in a recent work, entitled "Traité élémentaire des Maladies des Femmes," M. le Dr. Elleaume enumerates at the end of his book the means which have appeared to him most efficacious in its alleviation or cure. Dr. Elleaume first alludes to ablutions frequently practised, and to injections of a watery solution of starch. After each ablution the interior of the vagina should be powdered with starch, mixed with from one-thirtieth to one eighth of its weight of nitrate of bismuth. He alludes, in passing, to a formula recommended by M. Hartmann, stated to have good effects, consisting of a decoction of white hellebore in water. On other occasions he has seen benefit derived from the infrication of the following ointment repeated several times a day:—Acetate of morphia, 1 part; lard, 60 parts; chloroform, 8 parts; and oil of sweet almonds, 40 parts; to which in some cases a little carbonate of soda may be added. If this fail, the lotion recommended by Trousseau, consisting of 1 part of carbonate of potash in 12 of water, may be tried, or a lotion containing 1 part of corrosive sublimate, a little alcohol, and 171/2 parts of distilled water. In the former case a dessert-spoonful, in the latter a tea-spoonful, may be added to a pint, and subsequently to half a pint, of water, and frequently injected as a lotion, to be used three or four times a day. In very rebellious and refractory cases, good results may sometimes be obtained by employing a solution of nitrate of silver, in the proportion of 1 part of nitrate of silver in 210 of distilled water; and M. Dievdonné has even employed light cauterization of the clitoris and adjoining parts with the pure nitrate of silver. Lastly, M. Elleaume states he has sometimes triumphed over very bad cases by the application of compresses saturated with a strong solution of perchloride of iron. (See *Journal de Médicine*, July 1869.)

Extracts from British and Foreign Journals.

Treatment of Puerperal Convulsions.—M. Bailly, in a long and carefully-written article on this subject, which is about to appear in the "Nouveau Dictionnaire de Médecine et de Chirurgie," divides the treatment into curative and preventive. The means adopted with the former object in view he subdivides into the medical and the surgical. The value of medical treatment in puerperal convulsions, he remarks, is considerable, and great importance must be attached to the fact so strongly insisted on by Paul Dubois, that pregnancy only gives rise to convulsions indirectly, and after primarily inducing uræmia, which, in fact, is the disordered condition requiring to be combated. The evacuation of the uterus is doubtless a desideratum and favours the cessation of the attacks, but it does not in the greater number of cases cause their immediate suspension, nor is the extraction of the child always possible or inoffensive. The pathology of uræmia is obscure, as well as its medica ltreatment, when it occurs as an accompaniment of the puerperal state; but two means have been found empirically to be of much greater value than the rest, to wit, the abstraction of blood and the employment of anæsthetics. As regards the first of them, M. Bailly ranges himself with the great French authorities, Baudelocque, Mauriceau, Dubois, and Madame Lachapelle, and pronounces decidedly in favour of moderate abstraction of blood, the amount varying according to circumstances from 30 to 60 ounces. M. Bailly entertains no doubt respecting the value of anæsthetics, though he does not advise that they should be carried to so full an extent as recommended by M. Horand, of Lyons, holding that they do not possess any action on the primary cause of the affection, but simply act as paliatives, diminishing the abnormal excitation of the spinal cord, produced by the circulation of unhealthy blood through it, and by the vulvo-uterine pain. By their means, however, the violence of the convulsions is diminished, and the dangers attendant on cerebro-spinal congestion are in great measure removed. When chloroform is used, it should be administered in the simplest mode, and, in regard to time, by preference at the moment of

agitation, which anounces the return of the paroxysm. The patient should be rendered quite insensible, and sleep may be maintained for four, six or eight hours. In one instance a woman was kept for a whole night under the influence of chlofoam with happy result. Besides the foregoing means, M. Bailly, in common with all other authors, strongly recommends the employment of purgatives, as of calomel and jalap, and of glysters; but objects to the use of emetics, on account of the danger of the entrance of the matters vomited into the trachea during a paroxysm, thus inducing suffocation. Vapour baths, he thinks, can only be used in cases where the attacks succeed one another at periods of several hours, with lucid intervals. Sinapisms, blisters, and dry-cupping, he thinks, are all of doubtful value. Little benefit can be expected from antispasmodics. The patient should be placed in the middle of the bed; the surgeon should not forget to draw off the water if requisite. Lastly, precautions should be taken to prevent the patient from biting the tongue. (*Bulletin général de Thérapeutique*, Aug. 30. 1869.)

Treatment of Pueperal Convulsions.—In a very brief but intelligently-written communication to the Philadelphia *Medical and Surgical Reporter*, Dr. H. L. W. Burritt gives the record of twenty-five years' experience in this disease, and concludes by saying that his observation has made him a decided believer in bleeding, as a "sheet-anchor," with chloroform and turpentine, which is a remedy not to be despised. The causes, he thinks, may be ranged in this order (constipation being premised):—Mental, one-half; protracted labour, one-fourth; and the rest various, as alibuminuria, &c. "I cannot see," he remarks, "any reason why a physician, who believes in Harvey, should dread taking blood from the arm more than from the nose, unless fear of fashion has him fast by that organ."

Emplastrum Mercuriale in Cutaneous Affections.—This remedy it appears is largely employed by V. Hebra in the local treatment of cutaneous affections, and especially in those which are characterised by a deposit of some diseased product in the skin. The composition of this remedy is shown in the following formula:—

℞. Hydrargyri, ʒ iij.
Olei terebinthinæ, ʒ iss.
Emplast. diachylon, ʒ xij.—M. ft. Emplastrum.

It is most commonly used in the syphilides. In hard chancre it is preferable to all other local applications, and can be conveniently used when spread on linen and wound round the

penis. It is very useful in enlargement of the inguinal glands previous to the formation of an abscess. It is indicated in the squamous and ulcerated forms of cutaneous syphilides, where its value may be shown by covering one portion of the affected skin with the plaster, and leaving another exposed, when it will be found that the former soonest recovers. It is very advantageously applied to the condylomata of children, and in psoriasis palmaris and plantaris; in rhagades it may be mingled with a little linseed-oil. Dr. Neumann uses the same remedy in the obstinate form of cutaneous disease termed acne indurata, and recommends it strongly in sycosis. Finally, it constitutes an excellent remedy against that most obstinate and distressing affection termed lichen urticatus chronicus. (*Der praktische Arzt*, 7, 1869.)

Treatment of Varices of the Lower Extremities.—Prof. Jüngken, whose experience has been large, considers that the best treatment for the radical cure of varices consists in the injection of the cavity of the dilated vessel with liquor ferri sesquichloridi. It is most applicable to those cases where there are a few large swellings: it is less appropriate when there is a chain of smaller swellings. Even in these, however, one or more of larger size may be singled out and injected, care being always taken that the vein is not transfixed and the liquor injected into the connective tissue. A second point to which attention is indispensable is, that the varix about to be injected should be carefully compressed on both sides by a compress roller, or by a tourniquet, or, when it is difficult to apply these, by means of the finger; and the pressure should be continued till the blood is completely coagulated and forms a provisional thrombus. No general rule can be given in regard to the quantity of the solution of iron requisite to be injected, but whatever the quantity used, it should be thrown in very slowly, with intermissions of several minutes, and without removal of the pipe from the cavity of the vein. The varix, when the injection has been properly and carefully performed, should have the consistence of a soft boiled egg. The pipe may then be swiftly removed and a small quantity of charpie applied to the little wound. After complete coagulation has taken place blood ceases to flow, and the tourniquet may then be removed. The leg should be carefully raised and kept perfectly quiet; and, according to circumstances, lead lotions, or, if requisite, leeches and salines, may be administered. Recovery often occurs with great rapidity. (*Berliner Wochenschrift*, 1869, 7.)

Hypodermic Injection of Solution of Mercury.—M. Bouilhon gives a formula for a solution of mercury which is free from the ordinary disadvantages attending the injection

of the soluble salts of this metal, such as suppuration, sloughings, &c. The salt he recommends is a double compound of iodide of mercury and sodium, the watery solution of which, in the proportion of 1·66 to 100 of water, can be injected subcutaneously to the extent of twenty drops, with a pure silver syringe, without danger. The salt is obtained by the saturation of a boiling hot solution of iodide of sodium (1:4) with iodide of mercury, and subsequent dilution with twenty times its weight of cold water. Iodide of mercury is precipitated, whilst the double salt remains in solution. The crystals are evanescent, and possess a yellow colour when hydrated, but assume a lively red tint when dried. (*Centralblatt*, No. 35.)

Carbolic Acid as a Febrifuge.—M. Chevreul has reported to the French Academy of Sciences that Drs. Jessier and Barrant, in the Mauritius, have been trying the effect of carbolic acid in twenty-seven cases of obstinate intermittent fever, in which quinine and iron had been employed without any good results. They are stated to have injected three-fourths of a grain of the acid dissolved in water, hypodermically, with most satisfactory results. (Ibid.)

Treatment of Dysentery by large doses of Ipecacuanha.—Dr. Yandell remarks that the three methods of treating dysentery most practised by physicians in the valley of the Mississippi are by opium, by salines, and by quinine; but that there are some cases in which, when these methods have been tried and have failed, a successful issue may be obtained by the administration of large doses of ipecacuanha. The quantity of the powder given amounted to from ten to twenty grains, the action of the medicine being in some instances guarded by the hypodermic use of morphia, or, which he regards as still better, of opium. He believes that peppermint-water is a better vehicle than the tincture of orange-peel for exhibiting the powder. In the second case which he records the patient was treated with salines on Sunday, acids on Monday, quinine on Tuesday, opiates on Wednesday, and astringents on Thursday, all pushed to the full without benefit—rather sharp work for the intestinal mucous membrane. On Friday and the two following days she had ipecacuanha, with the hypodermic injection of morphia; but this patient succumbed to the disease. In several other cases, however, a good result followed its employment. (*Western Journal of Medicine*, iv. 8, 473.)

The Application of Electricity in Hydrocele and Amenorrhœa.—M. Friedenthal states that he completely dispersed the hydrocele in five cases by the application of a galvanic current, and that after eight months no relapse had occurred in any of the cases. The current was applied in the usual way.

He also reports a case of amenorrhœa occurring in a woman aged thirty, who had experienced various neuralgic affections, and who had never menstruated in her life, though the cause of the disease is not mentioned. Very various means of treatment had been employed without effect. The disease yielded at last to the application for two months uninterruptedly of galvanic electriticity and faridisation. The former was applied from the sympathetic to the head, and from the lumber vertebræ to the inner surface of both thighs; the latter was applied in the form of a secondary current with dry rheophores. Abundant menstruation set in at the expiration of the above-named period, and recurred regularly from that time forth.

Cutaneous Affections caused by the use of Bromide of Potassium.—Bromide of potassium has been so largely employed of late years in the treatment of a great variety of diseases, that it is well to bear in mind that it may itself induce certain cutaneous affections, and these have been particularly noted by M. Voisin. He enumerates no less than five; namely, 1. An eruption resembling acne, affecting principally the face and chest, accompanied by more or less itching, and rarely with fever. This may occur when not more than a drachm has been ingested. 2. Amongst ninety-six epileptics treated with bromide of potassium, there occurred six times large, elongated, rose or cherry-red swellings, half an inch or more in diameter, on the surface of which collections of pustules, also resembling acne, were developed. The swellings occurred invariably on the lower extremities, and were extremely painful. They healed very slowly, thick crusts forming, leaving indelible yellow spots, covered with scales. 3. On two occasions an exanthematous eruption resembling erythema nodosum appeared, though unaccompanied by any febrile symptoms, which lasted for more than six months. 4. Very troublesome furunculosis, or succession of boils with carbuncles on the neck. 5. In one instance an eczematous eruption appeared on the legs, which lasted for a year, and was accompanied by profuse secretion. In this instance, also, the greater part of the head was affected with pityriasis. The treatment recommended by M. Voisin, as generally applicable for these cutaneous affections, consists in the administration of alkaline drinks and baths, sudorifics, local emollients, &c. (*Centralblatt*, No. 37.)

On a Means of Prolonging the Narcotic Effects of Chloroform.—It is sometimes a matter of importance to maintain the narcosis of chloroform for a considerably longer period than the state of the respiration and pulse renders safe or advisable under the circumstances. M. Uterhart recommends the subcutaneous injection of morphia. He was led to its

employment from experience of its efficacy in the case of a drunkard, in whom, after the hypodermic injection of morphia, it became requisite to employ chloroform. The excellent results obtained induced him to use it in four other cases, half a grain of morphia being methodically injected a little while before the commencement of the chloroform inhalation. In experiments on dogs, which it is well known bear chloroform badly, narcotism can be admirably effected in this way; a fact supported by the observations of C. Bernard and Radziejewski. A period of from six to ten minutes after the injection of the morphia should be allowed to elapse before commencing the inhalation of chloroform, to permit of the absorption of the morphia. (*Centralblatt*, No. 36.)

Asphyxia from Chloroform successfully treated by Electricity.—An interesting case of the advantages of the timely and appropriate use of electricity has lately occurred at Ulm. A young man, aged 20, suffering from toothache in the early morning, poured about a drachm and a half of chloroform on a handkerchief and laid down on his left side, with the handkerchief before his nose and mouth. The boy who called him at the usual hour found him incapable of being aroused, not apparently breathing. At 6.30 A.M. Dr. Volz found him of a cadaverous color, with closed eyes, pupils contracted, lips pale, lower jaw moveable, tongue retracted, pulse regular, weak, and slow; respiration feeble, with rattling in the throat; general anæsthesia. The tongue was brought forward, the feet were brushed, spirit of mustard rubbed in, and burning sealing-wax dropped on the chest, with the object of exciting sensibility, but without effect; the heart's action became weaker, and the breathing finally ceased. Artificial respiration was now undertaken with slight but very transitory improvement, and the respiration again completely stopped, and the pulse became scarcely perceptible. Dr. Volz now sent for his induction apparatus, and placed the electrodes, the disks of which were armed with small sponges, on the two sides of the neck, at the external border of the sterno-cleido-mastoïdeus, near the lower part of the muscle. After the current had been once or twice opened and closed again, deep inspirations occurred, the pulse became more perceptible, the face reddened, coughing occurred, and the mouth became filled with bloody mucus. Dr. Volz then placed an electrode on the pit of the stomach, the other remaining over the right phrenic, and each time the current was closed a full inspiration occurred. Sensibility to the electric stimulus soon displayed itself; the eyes opened and vomiting took place. The breathing from this time (8.30) forward was regular. The patient was brought into a warm

room, and his cold extremities covered with warm clothes. Vomiting recurred once or twice before midday, and consciousness was gradually restored, but the greater part of the two following days were spent in sleep. In this instance there is reason to believe the narcosis had endured for five or six hours, and restoration to life was undoubtedly effected by the rhythmical excitation of the phrenic nerves, a plan that was first recommended by Ziemsen, and which certainly deserves to be systematically practised in every case of apparent death from asphyxia. (*Der praktische Arzt*, July 1869.)

Care of the Teeth.—From a work on the hygiene of the mouth, by Dr. Kuhn, we extract the following:—Sugar and saccharine compounds are very injurious to the teeth, as are also green and acid fruits. Alcoholic liquids are harmful. Hot and cold things must be avoided. The mouth should be rinsed out every morning with warm water to which a few drops of eau-de-Cologne or tincture of arnica have been added.

Treatment of Priapism.—Dr. Hargis gives the details of an interesting case of idiopathic priapism, or, as he terms it, priapismus sine concubitu persistens, and observes that the obscurity of the causes of this form of priapism, its intractable nature, the extreme pain which accompanies it, and its not *very* infrequent occurrence, attach considerable interest to its history and treatment. Nevertheless it is scarcely more than alluded to in our systematic treatises either on surgery or medicine generally, or in those which specially treat of the diseases of the genito-urinary organs, and the cases which have been placed on record are remarkably few. In most of these cases it occurred immediately after copulation, and resulted apparently from the extravasation of blood into the lacunæ of the fibrous texture of the penis. In some instances incisions have been made, sometimes with and sometimes without success. In other instances, vigorous antiphlogistic measures have been employed, as bloodletting, leeching, iced applications, cold baths, &c., and again sometimes with speedy and sometimes with very slow recovery. In Dr. Hargis's case the man was a mulatto, aged 28, and addicted to excessive venereal indulgence. The attack came on, or rather was continuous with, the act of copulation; great pain was experienced, increased on pressure; no disease of the prostate, no vesical irritation, and no entozoa in the rectum were present. The man was at once placed on fifteen grains of bromide of potassium, every two hours. After three doses the pain was relieved, and the organ was flaccid but sore, and he was ordered to continue the solution in doses of five grains every four hours. On the following day he was well. Two months after he had a repetition of the attack under the same circumstances, and was

again cured by similar treatment, though, from the accidental absence of Dr. Hargis, he had been affected for fourteen hours, and had undergone other treatment, without relief. The influence of the bromide over spasm and the reflex action of the nervous centres is here very unmistakably shown, and as Dr. Hargis remarks, in the second attack it is extremely probable that, had not the disease been controlled by treatment, some of the accidents, inflammation, extravasation, &c., that have been observed in other cases, would have occurred sooner or later. (*The New Orleans Journal of Medicine*, July 1869.)

The following plan has been repeatedly used with success in strangulated hernia:—Place the patient in most convenient position for taxis, inject hypodermically, immediately over point of obstruction, twelve drops of Magendie's solution of morphia; cover the patient's face with a towel, and pour over the tumor, from a considerable elevation, a bucket of very cold water; push the bowel back before the shock is recovered from. This plan will frequently succeed when all others have failed. (*Baltimore Medical Bulletin*, vol. i. 16.)

Notes and Queries.[1]

The Treatment of Neuralgia.—Dr. E. Woakes writes to us as follows:—

"In reference to the question raised by Dr. Chambers (*Practitioner*, p. 70), respecting the unsusceptibility of the skin to the blistering effect of cantharides in certain forms of neuralgia, I would observe that up to a very recent period I was frequently applying blisters for sciatic and brachial neuralgias, &c., but cannot recall a single instance of failure to produce ready vesication. I have no experience of its behaviour when hypochondriasis is superadded.

"I venture to append some brief notes of a case illustrating the use of *ergot of rye* in neuralgia, which, during the past two years, has in my practice superseded the use of blisters in this disease. Employed in the first instance[2] to combat the neuralgic complications of herpes, its more than anticipated success, when so exhibited, induced me to give it to patients presenting every variety of neuralgic disease as they happened to occur. The success, on the whole, has been great, though failures were numerous; especially was this so when, in ordinary tic, a carious tooth, or some equally manifest exciting cause, existed. I believe it sometimes failed through a timid use of the drug, though increasing experience assures me there is scarcely any limit to its safe employment. I anticipate the best results from its use in sciatica, having recently had three severe cases in *males* who recovered rapidly under its use.

"*Feb.* 23, 1869.—Mrs. B. æt. thirty-three years, consulted me respecting a luxuriant crop of shingles affecting the right side. The rash extended from the middle of the sternum in front, crossing the lower half of the right breast (she was suckling her

[1] The Editor, being desirous of making this department a useful medium of communication between practitioners, will be glad to receive short notes on theoretical or practical points in therapeutics,—brief jottings on those numerous queries which suggest themselves from time to time to a medical man as he "goes his rounds," but which he has neither the time nor, in some cases, the opportunity of answering. The Editor does not pledge himself to reply to every question addressed to him, but he hopes to make the "department" the means of supplying the information required; and this he can only effect by the hearty assistance of his readers.

[2] See my paper, which was noticed in the *Practitioner*, p. 257, vol. i.

fourth infant at the time) to the spine posteriorly. Nothing was prescribed as there was no special symptom.

"*Feb.* 27.—Since yesterday has been suffering acutely from pain in the back. It was evidently neuralgic, and most severe in its character. It commenced at that dorsal vertebra at which the herpetic zone terminated, and extended downwards for about three inches, the situation suggesting the posterior roots of the subjacent spinal nerves as its probable site.

"She was prescribed—Ext. ergotæ liquid. ♏xv; ex àquæ ʒij; to be taken every three hours.

"*Feb.* 28.—Very much relieved. She volunteered the statement that the pain began to leave her after taking two doses of the medicine. To continue the medicine, as there is still slight pain in the same region.

"When seen a day or two afterwards, she was quite well. There was no relapse.

"I trust this brief statement may induce an extended trial of ergot in nerve affections, and so lead to definite ideas respecting its applicability."

Physiological and Therapeutic Effects of the Yellow Oil of Sandal-Wood.—Mr. Robert Park, of Great Stanmore, writes on this subject as follows:—"An experience of some twelve years in the use of this oil should enable me to speak with some degree of certainty as to the therapeutic value. The purest specimens are of an amber colour, although I have seen some sent out from good London houses nearly pale. Its smell is its most diagnostic property however. This is strong, pungent, penetrating, and most persistent; its taste is likewise strong and warmly aromatic, leaving behind it a feeling of dry astringency in the fauces.

"Its physiological effect is generally to constringe all the mucous tract throughout the body. Thus the immediate effect of a dose of it is to cause dryness of the fauces and thirst. During its digestion and absorption this thirst is kept up and intensified in some cases: in all if a large dose be given (*i. e.* ♏xv or ℈j), and in many with a merely legitimate dose, it produces a feeling of 'drawing together' of the bowels, sometimes verging on colic. Its action is somewhat more powerfully felt on the kidneys. At a period varying from two to three hours after it has been taken, a sense of fullness is experienced in both regions. This sense of fullness, or weight, or tension lasts for a period varying from ten to twenty minutes.

"Its therapeutic action cannot be altogether explained by a study of its physiological effects. This, however, will no doubt form the subject of future experimentation. Hitherto the drug has only been used in the treatment of one complaint, but I

believe it will soon be found to be a valuable remedy in other diseases. Its action in the disease to which I refer, viz. blennorrhagia, seems to be quite specific. In fact, if I believed any medicine was really and truly entitled to be called a specific in reference to any particular disease or complaint, I would say this one had earned the title *par excellence*. It does not increase the flow of urine, neither does it seem to exercise its specific influence by or through the urine, for I have noted cases where the blennorrhagic discharge and urethral pain have been very considerably modified between the first dose and the first micturition afterwards. It does modify the urine also, however, so as to make it very soothing and grateful to the inflamed urethra.

"I believe the late Dr. E. Milner, of Glasgow, to whom I served my apprenticeship, was the first in this country to use it for the cure of blennorrhagia. At all events, if he was not the first to discover its specific virtues, he was the first to introduce it extensively into medical practice. Like all other remedies, it has been much abused. Those who have heard of it for the first time, and have embraced it as an infallible cure for every case, have of course been disappointed. I say of course, for none of our drugs are infallible. An extensive experience, however, enables me to say this for the Ol. Sant. Flav., that for the cure of blennorrhagia it is by far the most safe and reliable drug we have in or out of the Pharmacopœia. The cases in which it is most efficacious are not those of sickly patients with thin mucoaqueous discharges, but those of full plethoric subjects with thick purulent discharge, and even considerable scalding. Given in a case of this kind as soon as possible after the appearance of the discharge, the effect is simply very gratifying both to patient and doctor. The discharge disappears, and the scalding is no more felt; and if the medicine be continued, and collateral treatment attended to, in from two to five days the cure is complete: that is to say, there will have been no discharge seen for twenty-four hours, and there is no pain or abnormal symptom whatever. The patient must not be dismissed now, however, without a caution to abstain rigidly from all stimulants for at least a week, nor must he within a similar period take a purge, else he will assuredly bring back the discharge; then this redeveloped discharge is, for some reason I have never been able to fathom, more difficult to deal with, nor have I been able to find any attempt at explanation in the works of either Cullerier, Ricord, or Lanceraux, or any of our own authorities. It is a clinical fact, however, which every surgeon must be aware of. The oil still exerts its specific effect, and keeps the discharge in abeyance, but the omission of a dose or a slight error in diet is quite sufficient to bring it back again. In this (as in various other cases not within the province of this article to notice) it will be

found necessary to vary the medicine, or to supplement it with mild injections, &c.

"I will merely add that complications are to be treated separately; although the exhibition of the oil is by no means contra-indicated by the presence of orchitis, prostatitis, or phymosis. It may be given perfectly well whilst the appropriate treatment for each of these is being carried out. To this rule there is one exception, viz. in orchitis. If it be requisite, as it very often is, to give a purge, let it be given at once and before the oil is administered: as purges and stimulants (including coffee, and I strongly suspect tea also) are contra-indicated during its administration. I have never once, however, seen any of the above-mentioned complications occur during a course of the oil,—I mean idiopathically.

"The dose is ♏v. This is sufficient. More is superfluous, and in some instances injurious. This dose may, however, be advantageously given every four hours."

Nux Vomica in Delirium Tremens.—Mr. G. R. Denton, of Leicester, writes the following note:—"It may be interesting to your readers to hear that, having had two cases of well-marked delirium tremens occurring in habitual topers, I have treated them successfully, and speedily restored them by the use of 5 to 10-minim doses of tincture of nux vomica, repeated every four hours, having first made use of an active cholagogue purgative. I should like to hear whether the drug has been tried to any extent, and with what success, by others of my professional brethren."

Sulphurous Acid in Pyrosis.—Mr. J. Christophers, of Wadebridge, writes to us as follows:—"In the third number and first volume of the *Practitioner*, September 1868, page 169, is a very practical paper by Dr. Lawson on sulphurous acid in the treatment of pyrosis. Dr. Lawson observes:—'I am disposed to think that the usefulness of sulphurous acid in conditions of pyrosis can hardly be overrated.' In this opinion I quite concur, and by way of illustration I venture to send you the following case:—J. C——, a farm labourer, middle aged, emaciated and wan, had been suffering for six months from urgent pyrosis and cardialgia. The pyrosis was *very frequent* and profuse. He had been under medical care, and had taken bismuth, hydrocyanic acid, chloroform, creosote, mineral acids, tonics, liq. calc. saccharatus, and a variety of other medicines, all to no good purpose. On the 9th of July I prescribed for him sulphurous acid, 3 ss B.P., to be taken three times a day in water. On the 24th of July the pyrosis had nearly subsided, and the epigastric pain was relieved.

"*Aug.* 1.—The pyrosis was all but cured. To take ʒj doses of the sulphurous acid thrice daily.

"*Aug.* 15.—No pyrosis since the last visit. Continue the acid; the other symptoms are much relieved. Although he has been hard at work in the harvest field, he has gained flesh, but is still weak, and suffers pain about two hours after having taken food. With the view of relieving the pain, I now wished to try the hypodermic injection of morphia, but he lives too far away, therefore I prescribed $\frac{1}{8}$th of a grain of morphia in a pill at bed-time every night.

"*Aug.* 21.—No return of the pyrosis. The pain gradually decreases, and flesh and strength return.

"The frequency of the malady described, the uncertainty of the remedies in general use, and their very unsatisfactory results, induce me to trouble you with this note of a case in which sulphurous acid acted more like a charm than a medicine."

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[1] Any of the foreign works mentioned below may be procured by application to Messrs. Kelly, Piet & Company, 174 Baltimore Street, Baltimore.

THE PRACTITIONER.

NOVEMBER, 1869.

Original Communications.

ON THE USELESSNESS OF DRUGS IN THE TREATMENT OF ORGANIC GROWTHS.

BY ALFRED MEADOWS, M.D.

Physician to the Hospital for Women, and to the General Lying-in Hospital.

It must be evident to the most casual observer of the progress of medical science in our day, that the whole system of therapeutics as practised by our forefathers is being rudely shaken; its very foundations are undermined, and the whole superstructure is crumbling to atoms; and though it may be that, for a while at least, confusion and utter unbelief in the value of all drugs will prevail, as the natural and inevitable consequence of a reaction from the blind, senseless, unscientific faith of a past age, when authority was recognized as superior to fact, theory, or clinical demonstration, yet we may be quite sure that, if a new system of therapeutics is to be established in the present or a future generation—and it is quite certain that we cannot be content with the old, which has long since been proved to be inadequate to our wants—it will be more sure, more true, more scientific, and more practically valuable, in proportion as our knowledge of biology is superior to that possessed by the founders and cultivators of the moribund system. No doubt a period like the present is not unattended by danger. Like all movements which aim at reform, revolution is care-

fully to be guarded against. There are crises in medicine as in theology and politics, and the results to the public weal may be almost equally disastrous or advantageous in both. It behoves those therefore who desire reconstruction to be very careful how they set to work to pull down, lest in their zeal to rid the field of the tares they root up also the wheat with them.

I hope I may be excused for premising thus much, seeing that my present object is one rather of destruction than construction; for my purpose in these remarks is to criticise adversely, and that not from theory but from actual experience, very much of what is commonly and, as it seems, religiously believed and practised as to the therapeutic value of certain drugs which have a repute in the supposed curative treatment of certain organic growths. I cannot conceive anything more detrimental to the true progress of therapeutics than the tenacity with which we cling to what, if we honestly observed and faithfully acted up to our experience, we ought to discard as obsolete, useless, and even sometimes mischievous. In the present day there is rather a craze for some new thing in our Materia Medica; it seems to be taken for granted that progress in therapeutics can only be made by discovering new remedies for old diseases. I am the last to wish to check any such investigations, but I am strongly of opinion that he is doing quite as good service who honestly tests the value of current practice; and I own that I would rather for the present see our investigations directed to the testing of remedies in diseases for which they are reputed cures, than witness the many novelties which are being so frequently introduced, but which may be consigned in a few months or years to the obscurity which befits them. Our list of drugs is already more than sufficiently extensive; let us see if we cannot make it somewhat more simple, and at the same time enhance its value and efficiency.

And now to define somewhat more closely the scope of the following observations. I do not propose to discuss the therapeutic value of all the drugs which have at different times been vaunted for the cure of organic growths, neither do I purpose considering the applicability of those which I shall select to all organic growths, for my experience does not range

over so extensive a field, and I only intend to give the results of my own observation; but practising as I do chiefly with the diseases peculiar to women, I have in the last fifteen years met with a very large number of organic growths, and, as every one knows, they happen to be just that kind of growth which more probably than any other are subjected to a good deal of medicinal or drug treatment; I mean, of course, tumours of the uterus, chiefly fibroids, and ovarian tumours, which are almost exclusively of a dropsical character, or which, at any rate, have a good deal of fluid contents. Whether what I shall state as the result of my own experience of these growths be or be not applicable to similar growths in other localities, I must leave to the experience of those who meet with them, premising only that if it be so, I hope they will be candid enough to admit it.

Now I make bold to say that neither in my own practice, nor in that of others of which I have heard or seen, have I ever met with a clear, unmistakeable instance of the removal of one of these growths, nor even of their diminution by so much as one hair's-breadth, which diminution I could honestly and truly believe was due to the remedies that had been given with an amount of patient perseverance which certainly was worthy of success, if it had been in the power of drugs to achieve it.

I know, of course, that such a statement as this will be received with much disfavour in some quarters. Let then its exact meaning be carefully understood. I do not say that I have never seen one of these growths diminish in size; that would be untrue. Uterine tumours, at all events, certainly do, and not unfrequently, get less, and I am quite sure that there is ample scope for medical treatment in regard to them; but the proposition which I venture to answer in the negative is—Do we possess any drugs which, whether in the form of outward or inward applications, have the power either of arresting the growth of uterine or ovarian tumours, or, what is more immediately at issue as the point against which I contend, of promoting their absorption and consequent diminution and cure? I assume, of course, that if any reduction is accomplished, it must be by a process of absorption, for I know of no other way by which such a result can be brought about under the influence of drugs.

Now it can hardly be said, I think, that with the thousands and tens of thousands of cases of the kind alluded to, which have been subjected to treatment by different practitioners, with the view at least of attempting reduction and cure by drugs, we have not sufficient experience to determine so simple a question of fact; and yet I am not aware of any well-recorded and carefully-observed cases or case which in the least justifies the continuance of a system of treatment which is nothing else but blind routine, carried out without one atom of faith, and the very persistence of which begets what I cannot help calling professional dishonesty, while it encourages careless observation, and tends in its measure to foster unbelief in the true science of therapeutics, and so does an infinity of harm to the practice of medicine.

While declaring thus plainly my utter unbelief in the supposed power of drugs to remove organic growths from the uterus or ovaries, I do not forget the testimony of many very competent observers to the fact that uterine fibroids do occasionally disappear. I can only say that I have never had the good fortune to witness such a thing, and I am well aware of the extreme difficulty which sometimes surrounds the diagnosis of these cases. It may be that this difficulty has much to do with the supposed disappearance of some at least of the tumours in question. But, even admitting that the diagnosis was perfect, and that the result as stated did actually occur, we are still without any evidence to guide us as to the mode by which such a result was obtained, and certainly we have no right to assume that the remedies given exercised the smallest influence. Such an assumption appears to me the more remarkable when I notice what those remedies are, viz.: preparations either of iodine, bromine, or chlorine, in combination with iron, potassium, mercury, or calcium. Still more remarkable is it to observe that the external application of some of these agents to the skin of the abdomen is regarded as an essential and important part of the treatment! What right, I ask, have we, orthodox practitioners as we self-complacently call ourselves, to ridicule the follies of homœopathy while we countenance and gravely recommend such an absurd practice? Of very small use is all our advance in physiological and pathological knowledge, if

it does not teach us how foolish it is to expect that the rubbing in of iodine to the skin of the belly can remove one single fibre, one solitary cell, or one drop of fluid from a uterine or ovarian tumour. If we consider the subject in its anatomical or physiological relations, to say nothing of pathology, there is no explanation which can be offered, either in reason or in fact, why such a practice should ever have been introduced; and, lamentable as much of our treatment of disease is, I would match this one sample against any which can be brought for ignorance and folly.

Some may perhaps urge that the use of external applications is to secure more complete and speedy saturation of the system with the ingredient employed, so that on the occurrence of what are called constitutional symptoms more perfect local action may be secured! If this be so, the better plan would be to use the application where the absorbents are most plentiful, as in the groins for instance; but my argument still applies, for I dispute the value of the practice altogether. Nor does my objection to it rest solely upon its inutility; on the contrary, I believe that in the case of ovarian growths it is by no means powerless for evil. A woman who is taught that the application in question is ordered with a view to promote the absorption and removal of a large ovarian tumour, will naturally imagine that the more she rubs it the quicker it will disappear, and she will cheerfully submit to any torture for the accomplishment of such a result. Poor creature! she will soon have to be undeceived, and to learn that the remedies used with the best intentions have had little else to recommend them; meanwhile her zealous perseverance has very probably resulted in removing the last chance of her cure; for, partly perhaps from the strong friction employed, and partly from the irritant action of the remedy, from both of which she has suffered sorely, chronic subacute peritonitis has been induced, and adhesions between the abdominal wall and the cyst have resulted.

I know that what I have here stated is difficult of positive proof, but, referring to the cases which have come under my notice, I can certainly affirm that those with most extensive adhesions—and they are far more frequently met with in front

than behind—are the very cases in which these supposed remedies have been most perseveringly employed. It is strange that this practice of rubbing in irritative liniments should still possess so great a charm to prescribers, seeing that there is no single case on record of its having produced any good result. I would, therefore, earnestly entreat those who have hitherto adopted it to abandon it forthwith: by so doing they will not only spare their patient much discomfort, and probably give her a better chance of final cure, but they will also save the credit of medicine, and be truer to themselves as scientific men honestly seeking after truth. Moreover, by abandoning a practice which is alike futile and irrational, they will be doing their best to remove a great stumbling-block in the way of an improved method of therapeutics; for nothing hinders the progress of scientific reforms so much as that obstinate conservatism which indolently adheres to the old methods merely because they have the authority of age, never questioning their value or submitting them to the rigid test of experience.

I have written thus strongly upon the folly of these external applications, because I can confess to having been myself a great sinner in this respect. I have very diligently practised what I now denounce, and I can truly say that I have never seen any good result; I believe I have seen harm come of it, and I am certain that no rational justification can be given for its continuance. It is not, however, in the case of ovarian tumors alone that I would repudiate this treatment. Probably it has found still more persistent advocacy in cases of fibrous tumours of the uterus. Here also my objections to it are equally strong; and for the same reasons, except that there is less fear of exciting adhesive peritonitis. At first sight there might appear grounds for a plausible expectation that, in the cause of tumours with fluid contents, iodine or mercurial inunctions would help to promote absorption of the liquid; but whatever the expectations formed, I am sure I may reckon upon the concurrence of my readers in the opinion that no such results are or have been ever obtained; while, in regard to the hard solid fibrous tumours which we meet with in the uterus, not only is there never any such gratifying fulfilment of our wishes or hopes, but the more the matter is thought over and considered the less reason will

there be for even the smallest expectation. If we bear in mind the histological elements of which these tumors are composed, and the anatomical relations of the tumour itself to the part where the inunction is applied, we must at once recognise the absurdity of the treatment, and wonder how it could ever have been proposed, though that is far less difficult to understand than that in our day it should still be practised as diligently as if success had been a uniform result. Here again, too, I must plead guilty to the charge of having blindly followed this practice in scores of cases, but I may add also with the result which, if I had exercised my reason, I might and ought to have anticipated. I have seen this treatment perseveringly adopted for many years, but I cannot say that I ever traced the smallest benefit to it. I am certain that I have never seen a tumour appreciably reduced by it, but I have seen very many go on steadily increasing in what I may call their normal rate of growth.

If this be, as I feel sure it is, the experience of others as well as myself, surely the time has arrived when we ought to discard a method which is not only proved to be useless, but may be injurious, and is certainly disagreeable and even painful, and against which reason alike testifies.

Turning now to the medicinal or internal treatment of these organic growths—uterine or ovarian—we have, I fear, no better reason to be satisfied with the current practice of giving preparations of iodine, bromine, and chlorine, with mercury, potassium, calcium, &c. There is, in fact, no more trustworthy evidence in favour of these remedies when given internally, than when they are applied externally. If in any case they had the virtue which is imputed to them, we have a right to expect that that would be exercised not occasionally, and with *extreme* rarity, but very frequently, or at least in a fair proportion of cases: for it is unreasonable and contrary to all experience to suppose that a remedy which must act in a definite and intelligible manner, if it is to accomplish the reduction or removal of an organic growth, should exercise its properties only once in hundreds or thousands of cases. The very exceptional and extremely rare instances of its reputed action, even according to the admissions of its advocates, is *pro tanto* presumptive evidence against the exist-

ence of such a property, and in favour of the view that the effect was, as it were accidental—independent altogether of the imputed agent, and attributable to some entirely different cause.

In reference to some at least of these remedies, we have a tolerably clear idea of their properties and therapeutical actions, and the more definite our knowledge of these becomes, the more certain does it appear that they could not produce the effect described. We may often argue from the known to the unknown, and from the positive to the probable; such a practice is perfectly legitimate and frequently trustworthy. Take then the case of bromide of potassium. I know that just now this is a very fashionable remedy for a great variety of diseases: in many of them, I believe, it is about as useful as it is in the case of organic growths; but there can be no doubt that it has very definite and powerful properties, and some of these are so clearly proved on undoubted clinical evidence that we are fairly entitled to argue from them for or against its value in other cases.

The evidence which we possess of the influence of bromide of potassium on the nervous system as an anti-convulsive remedy, as an anodyne and hypnotic, entitles it to be classed in the first rank of nervine tonics; and if this be a fair deduction from the premises, how, I ask, can it be expected to exercise the smallest influence in promoting the disintegration and absorption of a solid tumour, or the removal of a liquid one? What relation is there between the well-observed, if not well-understood, effects of the drug and those which have been imputed to it? or what between the localities and structures which it is known to influence (the nerves) and those which it is hoped it may do?

But perhaps some one may say that bromide of potassium has also a special and equally well-observed influence upon the generative organs, and that in this way it affects uterine and ovarian growths. In answer to this I would remark: first, that while I admit that the drug certainly influences the sexual organs, I dispute the conclusion arrived at as to its influence on tumours of those organs. Secondly, judging from the effects observed in cases of disorder of the generative organs, and bearing in mind its well-known action on the nervous system, it is, I think, fair to conclude that in the former also the influence of the drug is exercised through the nervous system; possibly

directly upon the sexual nervous system. It is in this way that I am disposed to explain the reputed influence of bromide of potassium in cases of menorrhagia, believing as I do that the ovaries are the principal agents in many of the disorders of menstruation, whether characterised by excess or deficiency in the menstrual discharge. In all this I see no possible explanation of the supposed effect of the drug in promoting absorption of organic growths of the generative organs, and of the assumed fact I do not know one single case which can be cited in evidence.

So much for bromide of potassium, and no more, I believe, can be said of any of the other preparations of bromine. Probably the most powerful of all these, at least for evil, is the bromide of mercury. I have used this also, and have kept patients under its influence, even to slight salivation, for several weeks ; but as regards the tumour for which it was given, the only result has been to add another drug to my list of previous failures and disappointments.

Of the perchloride of mercury I would say, that having tried it perseveringly, and watched its effects honestly and fairly, I believe it to be as utterly powerless in arresting the growth or diminishing the size of any tumour of the uterus or ovaries as the water in which it is dissolved ; and measuring its value in these cases by the results which it is said to be capable of producing, in regard to the absorption and removal of imflammatory products, for that is really the slender ground on which its reputation is based, I am at a loss to understand where the analogy exists. Surely no one will pretend to say that a tumour (*e.g.* fibrous tumour of the uterus, or a multilocular cyst of the ovary) has any near relation to an inflammatory product (serious effusion or plastic lymph.) At present it is by no means clear to my mind, that the remedy possesses even the smaller of the two reputed properties, though I am free to confess that during its administration I have witnessed great improvement in cases of uterine engorgement, of pelvic cellulitis, pelvic peritonitis, and pelvic hæmatocele. I could not, however, affirm that the good results were due to the drug, especially as I have seen equally good effects from quinine, from leeches, and from rest.

Now as to iodine of potassium. Not only is this drug, in my judgment, absolutely valueless for the purpose in question—that of removing an organic growth—but it is undoubtedly, if persevered with continuously for any length of time, positively injurious. No one, I suppose, would think it good practice to give iodide of potassium in a case of anæmia, or in any other condition characterised by a want of power, or a depraved condition of the blood; yet these are the usual accompaniments of ovarian or uterine tumours, and under the influence of iodide of potassium I have seen a patient greatly enfeebled, her body spotted over with anomalous pustular eruptions, but not a sign of any diminution of the tumour for which this risk was incurred. Here again the analogy sought to be established between inflammatory products and organic growths utterly fails in my opinion; but even if it were true, it is still doubtful whether in non-syphilitic inflammations iodide of potassium does possess the absorptive power attributed to it. That it has great influence over syphilitic deposits I have no doubt, but the gulf between these and a fibrous or cystic tumour is, I fear, too great for the iodide to bridge over.

The only other drug to which I need make any present allusion is the chloride of calcium, and really one hardly knows whether to accept some of the statements put forward on behalf of this agent as serious or not. It has been gravely urged, for instance, that because in a few extremely rare instances fibrous tumours have been found to undergo a kind of calcified degeneration, therefore the administration of the chloride of calcium is called for to favour the process. Such reasoning as this is about on a par with that which urges the exhibition of lime-water to children affected with rachitis; it entirely overlooks the vital processes, and seems to regard the human body as a kind of chemical laboratory, where inorganic compounds may be precipitated in any part or organ we wish. For any other purpose, however, I believe the chloride of calcium to be about equally valuable. I have given it to patients many times, and for periods extending over not months only, but in some cases for years, omitting it for short intervals occasionally, but I must own to never having seen any, even the very smallest benefit, and certainly none in the direction aimed at. I am not

aware that it has even the negative merit of a reputation for promoting the absorption of inflammatory products, though it is said to be useful in uterine hypertrophy and engorgement; but beyond the chemical theory above quoted, I do not know of any rational explanation of its supposed virtue.

My opinion, then, of the therapeutic value of drugs in arresting the growth or promoting the absorption of tumours of the uterus or ovaries, is that they are simply useless. Where, as is frequently the case, organic growths in these situations give rise to, or are associated with, other conditions in which inflammation plays a prominent though chronic part, then undoubtedly medicines may and can do much good, just as they do for the like conditions arising in the absence of such tumours. Whether or no there are any agents capable of producing the desired results I am not prepared to say, but we certainly have not discovered them yet, nor shall we, I believe, so long as we are content to go on prescribing eternally the same preparations, which never have, and I believe never can, do the smallest good. The sooner we acknowledge this fact, and set to work to rear some efficient remedies, whose value shall be established, if at all, simply and solely from approved clinical experience, free from all prejudice, and untainted by any mere theory, the better will it be for our patients, and for our own reputation as scientific physicians. Let us not be afraid to confess ourselves beaten by the powers of nature, and, above all, let us not oppose theoretical reasoning to stubborn facts. If we cannot do good, at least let us not do harm; and when remedies have been fairly tried, as those have, which are here considered, with special reference to the diseases in question, and have uniformly failed of their purpose, let us not lack the courage or honesty to admit it, lest the responsibility rest with us of hindering the advancement of our science, by blind following of useless routine, to the injury of those committed to our care.

ON THE ACTION AND USES OF IPECACUANHA.

BY CHARLES DOUGLAS PHILLIPS, M.D.

Ipecacuanha was first brought into Europe about the year 1680. The merchant who brought it gave it to the celebrated Helvetius as a valuable remedy for dysentery, a reputation which it had probably acquired amongst the native Indians of Brazil. In the hands of Helvetius it proved so successful in the treatment of dysentery, that its fame soon spread through France, and from thence throughout Europe. But great as was the curative effect then attributed to it, in more modern times it has rarely been used in dysentery,[1] except in the form of Dover's powder, the opium of which was supposed to allay the pain and tenesmus.

Great doubts now exist respecting its efficacy in cases of dysentery, and for the most part it is considered useful only as an auxiliary, and especially when taken in conjunction with opium.

When ipecacuanha is introduced into the system in large doses by the mouth or the anus, it causes vomiting, and induces irritation of the mucous membrane of the alimentary canal, the eyes, and the respiratory tract. When it is introduced by subcutaneous injection, it produces nausea, vomiting, and a profuse and clammy perspiration, with great prostration. Its dust, when inhaled, has been known to produce in persons of a certain constitution some remarkable and distressing phenomena, as violent dyspnœa, coryza, and spasmodic cough, with wheezing and oppression of the chest; in many instances these symptoms have become most alarming. It is thought that light-haired people are most susceptible to the influence of this drug.

[1] During the last few years ipecacuanha has been freely used for dysentery in India. Large doses have been found to be tolerated in an extraordinary degree.—Ed. Practitioner.

Ipecacuanha contains a feeble alkaloid, emetina, which is supposed to be the active part, and an acid called cephalic or ipecacuanic acid.

There are six officinal preparations of ipecacuanha in the British Pharmacopœia, but I shall confine my remarks to the simple powdered ipecacuanha and its wine.

Ipecacuanha has long been known to have a peculiar action upon mucous membranes, especially those of the respiratory passages and the alimentary canal. Its operation as an emetic is exceedingly safe, as it does not produce inflammation even when an overdose has been taken by mistake. On this account it is often prescribed for children as a good and harmless emetic. Its emetic action is rather slow and uncertain as compared, for example, with sulphate of zinc; consequently it is not often ordered for adults.

As a diaphoretic it has unquestionable effect, whether given in the form of Dover's powder or vinum ipecacuanhæ.

Ipecacuanha exerts a power over all diseased mucous membranes in checking profuse mucous secretions, whether from the air-passages, the alimentary canal, or the genito-urinary apparatus. It is a most useful remedy in spasmodic coughs attended with profuse mucous expectoration and vomiting, especially in those troublesome coughs, accompanied by vomiting, which are incident to pregnancy. Its beneficial operation is clearly discernible in most cases of continued and obstinate retching or vomiting, where the stomach is not primarily affected, but disturbed by sympathy with some other part or organ of the body, whether the primary affection be acute or chronic. There are cases of sickness and spasmodic cough during pregnancy, accompanied by ulceration of the uterus, which fail to yield to it; but in many of these cases it will succeed if a few doses are administered before the patient raises her head in the morning.

The following two cases, amongst many others, came under the writer's observation last year; they are here mentioned as characteristic of some of the therapeutic actions of this drug:—

Mrs. E. M——, aged 33, of a nervous-bilious temperament, came under the writer's care May 27, 1868. She had enjoyed good health until within the preceding five months, when she

had suffered much from loss of appetite, nausea, vomiting, and frequent retching, especially in the morning. These symptoms steadily increased, and about four weeks later a severe cough ensued, accompanied by much dyspnœa and profuse mucous expectoration; the cough rarely subsided without first bringing on retching or vomiting. For the six weeks last past the cough and dyspnœa had so seriously disturbed her rest as to prevent sleep, or even lying down, for hours through the night; and the vomiting or retching, which occurred eighteen or twenty times in the twenty-four hours, had so emaciated her as to cause serious anxiety to herself and her friends. She was now about six months advanced in pregnancy, pale, weak, and emaciated; had a bad cough, with profuse viscid expectoration, and much dyspnœa, the cough almost invariably attended with vomiting or retching; appetite capricious and bad; tongue brown; vomiting after each meal, quite independent of cough; bowels regular; urine scanty and loaded with lithates. The form of the chest well developed; percussion normal throughout; sibilant and sonorous râles accompanying inspiration and expiration, anteriorly and posteriorly on both sides; respiration 18 per minute; cardiac sounds normal; pulse 72, weak; temperature 98½.

℞ Vinum ipecacuanhæ ʒj,
Aquæ pur. ʒvj.—Mix.

A teaspoonful to be taken frequently for cough or vomiting.

June 8, 1868.—Greatly improved in appearance; feeling stronger; no sickness or retching for the last six days; able to lie down and sleep throughout the whole night, the cough, dyspnœa, and wheezing having almost left her; appetite good; tongue clean; troubled with flatulency; bowels regular; urine clear, dark in colour; pulse 72, stronger.

Repetatur medicamentum. Not to be used except in case of cough, vomiting, or retching becoming troublesome.

July 15, 1868.—No vomiting or retching since last visit; cough recurring only two or three times in the forenoon, giving her no trouble; flatulency still continuing, with oppression after meals; appetite excellent; tongue clean; bowels regular; gaining flesh rapidly.

℞ Tinct. nucis vomicæ ℥ ss.
Aquæ pur. ℥ vj.

A tablespoonful to be taken morning, noon, and night.

In January 1869 Mrs. M—— was looking fat and strong, and said she had had no return of cough or sickness since the date last mentioned.

Mrs. H——, aged 36, of a nervous bilious temperament, came under the writer's care July 4, 1868. States that she enjoyed excellent health until within the preceding two months, during which time she had suffered from violent vomiting and retching, especially in the morning, and frequently throughout the whole day, and from loss of appetite, with a nauseous craving for food. She was now three months advanced in pregnancy, and rather emaciated; affected with retching and vomiting in the morning, and constant nausea throughout the day, with a feeling of weakness and sinking at epigastrium, and a sense of general prostration of strength and depression of spirits: appetite bad; tongue tolerably clean; bowels regular; urine clear and copious; pulse 72; temperature 99.

℞ Vini ipecacuanhæ ℥ j.
Aquæ pur. ℥ vj.

A tablespoonful morning, noon, and night; more frequently in case of sickness being troublesome.

July 16th, 1868.—Quite free from sickness for the last week. Appetite good; tongue clean; no longer feeling the sense of weakness at epigastrium, from which she had suffered so much; bowels regular; urine natural; feeling stronger and better in every respect.

To take a dose of the ipecacuanha night and morning for a few days, and then gradually to discontinue it.

September 5th, 1868.—Occasionally, during the interval, troubled with nausea, which was always removed by a few doses of the ipecacuanha.

The writer has now before him twenty-three carefully recorded cases of whooping cough. In most of these the cough came on in violent paroxysms, continued until a quantity of viscid mucus was ejected from the lungs by the mouth, and often by the nostrils, and increased in intensity until the contents of the stomach were evacuated.

In all these cases, where the vomiting had been more troublesome than the whoop, ipecacuanha has given very marked relief.

The dose recommended is half a drachm of the vinum ipecacuanhæ in four ounces of water, a dessert-spoonful to be taken every one, two, or three hours, according to the severity of the cough. Children under five years old should only take a teaspoonful of the same mixture, but many children of this age can tolerate, and are benefited by, much larger doses.

In the capillary bronchitis of children, even when complicated with croupy symptoms, it acts well. In these cases the writer orders ʒ ss of vinum ipecacuanhæ to four ounces of water, a teaspoonful to be taken every one or two hours, or much more frequently if the symptoms are urgent.

In many cases of nocturnal spasmodic asthma, in which hours are spent in great distress, with livid face and lips, loud wheezing throughout the chest, and want of breath, causing fear of suffocation, if there is no organic disease of the heart or the lungs, ipecacuanha will give quick and marked relief. Five drops may be taken as a dose, repeated every ten to thirty minutes for two or three hours, unless relief comes much sooner, in which case the dose should be diminished and taken less frequently. Care should always be taken to avoid its emetic or nauseating effect.

In these affections of the lungs, its expectorant and antispasmodic character cannot be doubted, nor its curative action in controlling and stopping the abnormal secretion of mucus.

Hæmorrhage in the early stage of tubercular phthisis, and in most stages of this disease, when produced by engorgement of the bronchial mucuous membrane, and accompanied by little or no acceleration of pulse or increase of temperature, is often readily stopped by ipecacuanha. In hæmatemesis arising from vicarious menses, and also in some cases of menorrhagia, it is very useful.

In many cases of dysentery it lessens the bloody and mucous discharge, and removes the cutting pains and tenesmus, especially in the early and late stages of the disease. In cases of dysentery or diarrhœa, where nausea, vomiting, or retching exists, ipecacuanha will stop the sickness, and at least control the dysentery or diarrhœa. The watery diarrhœa during dentition,

the diarrhœa with green evacuations, and the dysenteric diarrhœa, which are so common among children, rapidly yield to this drug. Vinum ipecacuanhæ is effective in dysentery and diarrhœa, but the writer has preferred the pulvis ipecacuanhæ, considering its action more speedy and trustworthy.

It is more necessary to vary the dose in dysentery than in any other class of cases, one grain every one or two hours being quite sufficient with some persons, whereas others require ten, twenty, or more grains as a dose. These larger doses sometimes, when first administered, bring on vomiting, which it is well to avoid; but if the patient is kept lying on the back, and the dose persevered with, it can generally be tolerated, and a rapid recovery often follows.

In the diarrhœa and dysenteric diarrhœa of children, one-fourth to one-half of a grain, with a little white sugar, at intervals of one to three hours, is generally sufficient, but the quantity must be increased if necessary.

In this paper ipecacuanha alone has been considered, not its relative value as compared with other drugs. It is not alleged to be the best remedy in all the cases enumerated above, but in all it is a useful one.

[Dr. Ringer's late work on Therapeutics having asserted the effect of small doses of ipecacuanha in checking vomiting, the Editor wishes to accumulate evidence upon this matter, as to which he is at present unable to pronounce any opinion. But he calls attention to the fact that should it be proved, as seems likely, that small doses of ipecacuanha exert a tonic effect upon the sympathetic system generally, it will be the most effective blow yet given to the homœopathic theory of *similia similibus*. It would be a farther illustration of the fact, which is forcing itself more and more upon our notice, that the words "similar" and "opposite," as regards the relations between drugs and diseases, are equally incorrect; being both of them based on the metaphysical fallacy that a drug must always act after one *kind*, though in different *degrees*, whatever the dose in which it may be given.—Ed. Practitioner.]

TREATMENT OF CHOREA.

BY WILLIAM BISSET BERRY,

Burghersdorp, South Africa.

In the *Practitioner* (pp. 137 *et seq.*) Dr. John Harley contributes a paper on *Conium in the Treatment of Chorea*. It is difficult, from a mere perusal of that paper, to ascertain whether Dr. Harley recommends us to use conium in the treatment of chorea in particular, or intends to inculcate upon the profession the necessity of giving conium in much larger doses than we have official authority for, if we would obtain any beneficial effect from the remedy in diseases in general. There occurs, however, the following passage:—"All previous observations upon the influence of hemlock in the various morbid conditions for which it is recommended, are of little or no value. It is necessary, I believe, to begin the inquiry anew. As a small contribution thereto, &c., I adduce the following instances of the use of conium in chorea;" from which it would appear that Dr. Harley believes chorea to be one of "those morbid conditions for which it (conium) is recommended." If this treatment of chorea by conium receive general sanction, we shall have the homœopaths down upon us again. For if Dr. Adams ("Paulus Ægineta," Book V., Art. *Hemlock*) is right in saying that the true interpretation of the term used by Plato (ἐκινήθη,) to express the condition in which Socrates died, be "convulsed," the homœopaths are sure to say, after forming an analogy between convulsions and chorea, "Here is another *simple* which in small doses cures symptoms which it produces in large doses." But be this as it may, most practitioners will regard the circumstance, that the *succus conii* effects a cure in such a disease as chorea only after some four or five pints of it have

been imbibed, or gives rise to the physiological effects of the drug only in doses of two, three, and four drachms, as rather a cogent reason for eschewing it altogether, or at least for at once casting about for another and a better remedy. Surely Dr. Harley cannot believe that the "parish doctor," in whose practice the disease frequently presents itself, and whose income is very limited, can afford to let each choreic patient have the run of his *succus conii* bottle. For such practices a remedy must be tolerably cheap as well as efficient; but the conium treatment would need to make the doctor's reputation speedily, otherwise it might bring him to the verge of insolvency.

Although we have never tried to subdue choreic movements by *conium*, we have no doubt but that they can be so subdued, Dr. Harley's testimony being unimpeachable in this and other matters where he makes himself responsible. But a comparison of the results obtained by Dr. Harley with conium, and those obtained by Dr. King Chambers with arsenic, as detailed in his "Lectures, chiefly Clinical," would perhaps give the palm to the latter. True, Dr. Harley availed himself neither of a shower of water nor of a simple aperient, but this can scarcely be allowed as an argument *pro* or *con*. Pereira also tells us: "In chorea, I have seen great advantage attend its (arsenic) use; in fact I know of no remedy for this disease equal to arsenic, which in a large proportion of cases acts almost as a specific." And Sir T. Watson, without giving his own experience of the drug, says: "Dr. Begbie, in an experience of thirty years, has never known arsenic fail." It is rather surprising that, in the systematic work of Dr. Aitken, the use of arsenic, as a remedy for chorea, is not alluded to. It savours of impertinence to add my mite of testimony to that of such honoured names; but my experience of arsenic, although far from as extensive, has been as satisfactory as Dr. Begbie's. Two of these cases, however, may illustrate all. One, a boy of fifteen years of age, had been choreic from infancy. His parents resided far from here, had been to many medical men without getting any relief for their boy, and being rather superstitious, had come to the conclusion that he "was possessed of a devil." They accidentally heard of some similar case which I had relieved, and about eight months ago they came with him to consult me.

The lad presented a pitiable appearance; long, lean, and lanky, his body was constantly writhing and twitching about, perpetually on the move. He had always been fed, for he speedily scattered any food or drink which he might try to convey to his mouth; and in mouthing the morsel brought by another, his face became contorted in a most extraordinary manner. I gave the father a supply of arsenical solution, telling him how to give and increase the dose, and when to leave off. I saw nothing more of the family until the other day, when the father brought his boy, but so altered that I could not recognise him. The boy had gradually gained in flesh and strength, his colour was healthy, and the choreic movements had gradually subsided, and had not returned. He had not taken the solution during four months previous to this latter visit. The other case was that of a boy who had been choreic for three years. For the first two years he had been also to various physicians, who had purged him, electrified him, treated him for worms, blistered him, bathed him, and given him iron with no benefit. A year ago he applied to me, took arsenic by my advice, speedily lost his jactitations, and has not since experienced them. The former case was so far analogous to Dr. Harley's conium case as it had the benefit of neither a shower of water nor an aperient; the latter case had a shower bath every morning, and continues it. Neither case had any history of rheumatism or any appreciable affection of the heart. In both these the dose of Fowler's solution was gradually raised from five to fifteen drops three times a day immediately after meals. Under these circumstances it would appear that a disease less amenable than chorea to such a convenient method of treatment as the arsenical might have been selected by Dr. Harley for experimentalising with the therapeutic action of conium. Not but what conium may be fallen back upon should arsenic be tried and found to fail; but surely the latter, from its cheapness, its tastelessness, its portableness, and freedom from decomposition, must still be the popular remedy with the profession for chorea.[1]

It is deserving of notice how closely the intelligent "guess"

[1] We think the majority of our readers will scarcely agree with Mr. Berry's sanguine estimate of the amenability of chorea to *treatment*, although it certainly very often terminates spontaneously.—Ed. Practitioner.

of that shrewd observer Dr. Chambers, as to the action of arsenic, is borne out by the results recently obtained by MM. Moutard-Martin and Hérard in their experimental researches into the physiological and therapeutical action of arsenic in pthisis (*Lancet*, vol. ii. 1868, p. 672). Dr. Chambers (*op. cit.* 4th Edition, p. 366) says: "As arsenic is not a normal constituent of any part of the body, and cannot be imagined to replace any normal constituent, while at the same time patients increase in strength and weight during the course of taking it, I suppose it must be an indirect constructive, acting powerfully on the nervous system." Referring to the experiments of Hérard, the *Lancet* says: "In the course of a few days only the patient revives, the eye shows new life, the complexion is better, the appetite is restored, and the patient even gains flesh. The beneficial action of arsenic is, however, observed in only one class of pthisical sufferers—those whose digestive organs have not undergone much impairment. In cases in which there is much impairment of the digestive function, and in which vomiting and diarrhœa are already present, the remedy far from doing any good often increases the condition of the patient." Hence the inference: "Its good effects are merely due to its influence upon the functions of nutrition." But M. Hérard contends that the arsenic acts beneficially locally, and reasons that Tyrolese and other arsenophagous mountaineers are longer-winded than others on account of the beneficial local effect of the metal on the mucous membrane of the lung: an argument as good as if we were to say that because a man dances vigorously after a glass or two of champagne, therefore alcohol acts directly upon the muscles of the legs. Dr. Radcliffe ("Lectures on Epilepsy," &c.) has made it manifest that the centre and source of all physical powers lies in the nervous system, and that if the muscular system is excessively fed and developed, while the nervous is comparatively starved, both are certain ultimately to break down. We have it also, on the same authority, that "the signs of wanting brain power are scarcely ever absent in persons who are liable to epileptic and other forms of chronic convulsive disorder," such as chorea. And as it does not appear that the arsenic-eating Tyrolese are in any other way so peculiar in matters of diet, as that in

this way the elements necessary for the perfection and maintenance of the nervous system are received; and as it has been proved by the testimony of many observers, that choreic subjects improve in mind and body under the arsenic treatment; it does not seem to be an unwarranted deduction that the drug acts in both classes of cases in the same way, viz. by promoting the growth and development of nerve tissue, every organ of the body being in consequence more perfectly supplied with a more potent nerve or vital force, and performing its peculiar functions in a more regular and complete manner. In this way the Tyrolean would be a better climber, not from any direct effect of the arsenic on the bronchial mucous membrane, but from his superior condition of innervation. The fact, also, that a course of arsenic is often successful in curing or relieving neuralgic pain—which, according to Dr. Radcliffe, "is to be regarded as a sign of defective vital power in general, and of defective nerve power in particular,"—is additional support to the probability that arsenic tends in some manner to give health and strength and tone to the nervous system.

A CASE OF PARALYSIS AGITANS SENILIS, CURED BY THE ACCIDENTAL APPLICATION OF ELECTRICITY.

BY U. S. L. BUTLER, M.D., L.K.Q.C.P.I., ETC. ETC.

Physician to the St. Paul Dispensary, Dublin.

WHILE occupied some few days ago in preparing an electro-magnetic machine for application to a patient, an old servant (upwards of 80 years), who had long been subject to violent spasmodic tremblings of both arms, chanced to enter the room. More I must confess in the spirit of levity than either philanthropy or philosophy, I asked her to take hold of the electrodes of the machines, at the same time pressing the bundle of soft wires some distance into the centre of the helix, so as to give a pretty sharp shock. Although much startled at first, she continued to hold the electrodes for a short time, perhaps a minute or upwards. She then left the room, but returned almost immediately, and with a half-terrified, half-triumphant air declared that since she got the shock the trembling had almost completely vanished from her arms. And in order to demonstrate the truth of her statement, she held in her hands a rather heavy tray, with a tea-cup and saucer placed upon it, with scarcely any perceptible motion. Had she attempted to do so before the application, the experiment, no doubt, would have proved in the last degree disastrous to both the tray and its contents. Now, however, occurred the most interesting and instructive features in the case. Having held the tray for some time in the right hand, which had previously been very much worse than the other, she took hold of it with her left—I suppose under the impression that, as the right had been so very much improved, the left, from not being previously so much

affected, would be completely cured. Her disappointment was, however, very great when she found that, so far from being perfectly restored, it was decidedly worse than before the application had been made. So much so, that she rather indignantly exclaimed, "Oh, sir, you only took it out of the right arm and sent it into the left." Although at first rather perplexed by the phenomenon, an explanation quickly presented itself, which was afterward verified by events.

Upon examination I found that she had held the negative electrode in the right hand, while the left grasped the positive. The effect of this proceeding was, of course, to cause the current to pass up the left arm, across the chest, and down the right arm, producing in the case of the down-running current a decidedly tonic and salutary effect, while the opposite result was caused by the up-running or inverse current. That such was the correct explanation of the change that was caused by the application, was fully and most satisfactorily proved to me by reversing the electrodes on the following day, placing the negative in the left hand and *vice versâ*. The result of this manœuvre was to restore the left arm to its former strength without producing much appreciable effect upon the right, thus plainly demonstrating the tonic effect of the direct current. I now, however, adopted what appears to me to be the correct and scientific mode of application, by bathing the fore-arm and hand with the negative moist sponge electrode, while the positive electrode was directed to the vicinity of the shoulder-point and brachial plexus, thus applying a direct current to the affected muscles. The result of the treatment was the best proof of the correctness of the principle upon which it was founded. A few applications repeated every second day completely restored her, and now her greatest source of enjoyment is to display her powers as an equilibrist to any one who may feel an interest in the matter.

[We print the above as an interesting example of the disappearance of a singularly incurable disease. We feel bound to say, however, that we ourselves incline to believe the cure to have been a result of *emotion*, and not a genuine electro-therapeutic effect.—Ed. Practitioner.]

THE VACCINATION QUESTION.

BY THE EDITOR.

PART II.

In our last number we reviewed the arguments lately urged in this country in support of the theory that cow-pox degenerates in passing repeatedly through the human system, so as to lose its protective power against small-pox infection. We came provisionally to the conclusion that the evidence adduced was incompetent to sustain this theory; but we reserved the final statement of our case on this point till we should have had the opportunity of analysing the facts as to the alleged transmissibility of other infections by the medium of vaccination.

In commencing the study of this latter question, we must remark that popular ignorance of medical subjects has a specially disastrous influence on the discussion of such a subject as this, which cannot be kept in medical hands, but from its general interest necessarily becomes public property. It is easy to raise the terror of infection in the minds of those who are unacquainted with the principles of pathology, but it is extremely difficult to explain, to those who have once been frightened in this manner, the deceptive nature of the cry thus raised. There can be little doubt that the effect of this cry on that section of the laity which listens to Dr. Collins, and his fellow-prophets of the Anti-compulsory Vaccination League, is to make it believe that lymph taken from the human subject may transfer to the recipient *any* constitutional disease from which the *vaccinifer* may have been suffering. We are not sure that we shall make ourselves understood to those non-professionals whose interest in questions of public health will induce them to read this article. Yet we would beg such readers, very earnestly, to try and follow the thread of our argument continuously.

Three totally distinct series of facts have been adduced in evidence of the liability of humanised lymph to carry with it

into the system of the recipient other diseases with which the subject from whom it was taken may have chanced to be affected at the time. It has been alleged that constitutional diseases, such as syphilis and scrofula, may be so transferred. It has been alleged that the lymph from certain individuals carries septic (or putrescent) infection, and provokes such diseases as erysipelas or pyæmia in the recipient; and it has been stated that various skin diseases, not ordinarily contagious, can nevertheless be conveyed by the medium of vaccination. We do not mean to say that these are *all* the charges that have been brought against humanised lymph, but we may fairly say that they are the only ones which would now-a-days be urged by any one possessed of the least tincture of medical science. The above is the order of their relative importance; but it will be convenient to deal with the least serious of them first.

1. It is alleged that various skin diseases, such as eczema, impetigo, &c. &c., which are not ordinarily contagious, can be transferred from one person to another by the medium of vaccine lymph. It would be scarcely necessary to refer to this statement at all, in speaking to an exclusively medical audience. But experience shows that the ignorant classes of the public, and even a certain number of the better educated, believe in the possibility of such occurrences; and in the out-patient rooms of our hospitals nothing is more common than to find mothers of children attributing the occurrence of such eruptions (which are really among the commonest affections of childhood) altogether to a vaccination which has shortly preceded their appearance. It will be sufficient to say here, that the opinion of the entire profession coincides with the very clear statement on this point which was made, some years since, by Mr. Paget.[1] That high authority says that the only connexion which can be rationally traced between the vaccination and the general skin eruption in such cases is this: that multitudes of children are naturally predisposed to the commoner eruptions, and that vaccination is only one of many trifling constitutional irritations, which might have precipitated the first appearance of such eruptive diseases. Considering that such skin affections, however troublesome,

[1] Appendix (Supplement F) to Mr. Simon's Collection of Papers on Vaccination. Blue-book. Spottiswoodes, 1857.

are trivial, curable, and harmless to the constitution, it would clearly be criminal for one moment to propose that we should forego the all-important protective advantages of vaccination from a fear of their occurrence.

2. A more serious matter is the charge that vaccination can cause septic infection, with consequent erysipelas or pyæmia, producing violent constitutional fever that may even be fatal. That such results do sometimes, though very rarely, follow the performance of vaccination, is quite true, but it is ridiculous to charge them to vaccination itself; they are produced by more or less culpable negligence on the part of the vaccinator in one or other of three directions:—Either (1) he has taken the lymph from a child actually suffering from acute septic disease—an almost impossible amount of carelessness; or (2) he has used lymph which has been stored too long, or stored in such a manner as to have been exposed to the combined influence of air and moisture,—in any case lymph which has undergone more or less of that putrefactive change which affects all animal matters placed in such circumstances; or (3) he has taken the lymph from a vesicle which had already become a *pustule*. It is true that such accidents do occur, though very rarely. But they clearly ought never to occur, nor would they ever do so if the proper precautions were always taken. If we admit, however, that in an infinitely small proportion of cases these things do happen, what does it amount to? Simply to this—that doctors are not perfectly infallible beings; and that just as they sometimes commit the grievous fault of attending a woman in labour when still tainted with the infection derived from another patient with erysipelas or scarlet fever, so— *though far less frequently*—they may, under the pressure of hurry, of emergency, or of overwhelming business engagements, omit the necessary precautions for making sure of the perfect sweetness and freshness of the lymph which they employ in a vaccination. Will any one pretend for an instant that the mischief done in this way by vaccinators equals the hundredth part of the more or less preventible calamities which occur from analogous causes in midwifery, or in operative surgery? The only difference in the circumstances is altogether in favour of

vaccination; for the risks are infinitely more recognisable and avoidable in this case than in the others.

3 By far the gravest charge, however, against vaccination with humanised lymph, is the assertion that it can accidentally convey constitutional infections, such as syphilis. For practical purposes we may take the case of syphilis only; for even the most pronounced alarmists of the French Academy admit that this is the only real danger of the kind now referred to. On this point, however, the outcry has become serious, backed, as it has been, by the production of an array of facts which at first sight wear a formidable appearance.

Up to the moment of the publication of the Rivalta cases, which occurred in 1861, European medical opinion had practically negatived the theory of the transference of syphilis by the medium of vaccine; and it will be well to remind ourselves of the extraordinary weight of evidence which had led to that decision. Mr. Simon, as medical officer of the General Board of Health, in 1857 addressed a series of questions to a very large number of medical men, both in this and other countries, and received answers from no less than 539 of them, in which number were included men of every kind of eminence, both general and special. It may be doubted if such an imposing muster-roll of witnesses has ever testified simultaneously upon any scientific question. With scarcely an exception, this large number of medical mend enied that syphiliscan be conveyed as a true result of vaccination; although some of them pointed out the obvious fact that by gross carelessness syphilis *might* be inoculated instead of vaccine, just as it might be accidentally inoculated in any surgical operation by the use of a knife or lancet fouled with syphilitic matter. The list of witnesses included the most eminent syphilographers, the most experienced vaccinators, and the greatest authorities upon children's diseases, besides a multitude of the greatest names in general medicine in England, France, and Germany.[1] If negative evidence be ever sufficient to disprove a theory, assuredly the conditions of the disproof of vaccino-syphilis were already fulfilled; for the weight of testimony was enormous, and far exceeded anything which can be produced in

[1] *Vide* Papers relating to Vaccination, *supra cit.* Appendix J.

the discussion of ordinary topics of dispute, whether in science or in any other sphere of inquiry. But the answers to the questions included much more than mere testimony to the non-occurrence of vaccinal syphilis; for several learned pathologists elaborately showed that the whole analogy of the transmission of other contagions is flatly opposed to the idea that two poisons can be conveyed by one lymph. And finally, to complete the tripod of proof, the direct experiments of Cullerier and others, on the effects of intentional admixture of syphilitic matter and vaccine, and of the vaccination of large numbers of persons with vaccine matter intentionally taken from persons suffering with constitutional syphilis, added positive evidence of the most powerful kind against the possibility of transmitting syphilis by an ordinary vaccination with lymph taken out of a true Jennerian vesicle.

Before criticising the new facts which are supposed to override this extraordinary mass of evidence, let us note that, with the partial exception of Ricord,[1] scarcely one man of importance among the above witnesses has changed his mind even now; and it would be easy to show that even Ricord is no true convert to the new doctrine. And we may here state that we have lately made it our business to question great numbers of hospital physicians and surgeons, and of general practitioners, and that from all of these, with one exception, we have received the most positive denial that vaccination ever really causes syphilis. The one exception is that of an eminent dermatologist, who has seen one case of infantile syphilis, for which he cannot, after the best investigation he could make, see any other cause than a previous vaccination. The case, however, lacked so many important details, which should appear in any history intended to establish a proof, that we believe its observer himself would hesitate to publish it as a positive case of vaccino-syphilis, or to commit himself to any opinion on the general question. We beg to

1 Since writing this we find, from Mr. Lee's new edition of his article on Syphilis in Holmes's "System of Surgery," that he does believe in the possibility of vaccino-syphilis; though he has never seen a case. He reproduces a drawing, sent to him from Paris, of one of the reputed cases which occurred there: but gives no particulars of the case. From internal evidence it was probably Trousseau's case, which Dr. Seaton (Handbook, p. 330) has shown to be quite worthless.

dwell strongly on one fact that suggests infinite possibilities of self-deception on the part of those prepared by prejudice to expect a catastrophe. We refer to the remarkable case in which Mr. Henry Lee, the eminent syphilographer, actually showed before the Medico-Chirurgical Society what he believed to be syphilis following vaccination. With great candour Mr. Lee afterwards avowed that he, with all his vast experience, had been mistaken, and that the child had never had syphilis at all. Such a fact speaks volumes as to what might occur under less critical eyes than those of Mr. Lee. We would also mention, as specially important, a conversation in which Mr. Acton, a day or two since, informed us of his present views. With all his immense experience of genuine and supposed syphilis, Mr. Acton holds unwaveringly to the denial of vaccino-syphilis which he gave twelve years ago in answer to Simon's questions. But what is even more important, he described to us numerous cases in which intelligent medical men had brought children to him suffering, as they believed, from syphilitic affections of the skin, mouth, anus, &c., when in reality there was no syphilis present, and the spots, sores, tubercles, &c., rapidly disappeared with mere cleanliness and simple dressings. Finally, we cannot withhold our own less extensive, but still interesting experience, which ranges over twelve years of London practice, and includes what we saw successively, as physician accoucheur's assistant at King's College, physician in charge (for six months) of the Surrey Dispensary, physician (for five years) to the Chelsea Dispensary, and assistant physician (for eight and a half years) to the Westminster Hospital. Of the thousands of children seen by us not one has presented even suspicious symptoms of vaccino-syphilis, although our attention has at all times been keenly directed to the subject of infantile syphilis, of which we have seen plenty.

Upon the above evidence alone we are plainly entitled to assert that, if vaccino-syphilis does ever occur, it must be of the most extreme rarity. It must be at least as rare as triplet births.

But we go much further than this. We maintain that, upon the strict logical principles of evidence, a case is made out for the DISBELIEF of any statements such as have recently been

made as to the occurrence of vaccino-syphilis. We shall analyse the most striking of these statements presently; it will here be enough to remark that they are isolated observations, very few in number, and not in one single instance fulfilling the conditions of a philosophical induction. Under these circumstances we take the liberty of recalling to our readers' minds the statement by Mr. Stuart Mill of the grounds of philosophic disbelief (Logic, vol. ii. pp. 155 *et seq.*):—

"By disbelief is here meant, not the state of the mind in which we form no opinion concerning a subject, but that in which we are fully convinced that some opinion is not true; insomuch that if evidence, even of great apparent strength (whether grounded on the testimony of others or on our own supposed perceptions), were produced in favour of the opinion, we should believe that the witnesses spoke falsely, or that they, if we were ourselves the direct recipients, were mistaken.

"That there are such cases, no one is likely to dispute. Assertions for which there is abundant positive evidence are often disbelieved, on account of what is called their improbability, or impossibility. And the question for consideration is, what, in the present case, these words mean; and how far, and in what circumstances, the properties which they express are sufficient grounds for disbelief.

"It is to be remarked in the first place, that the positive evidence produced in support of an assertion which is nevertheless rejected on the score of impossibility or improbability is never such as amounts to full proof. It is always grounded on some approximate generalisation. The fact may have been asserted by a hundred witnesses, but there are many exceptions to the universality of the generalisation that what a hundred witnesses affirm is true. We may seem to ourselves to have actually seen the fact: but, that we really see what we think we see, is by no means an universal truth; our organs may have been in a morbid state; or we may have inferred something, and imagined that we perceived it. The evidence, then, in the affirmative being never more than an approximate generalisation, it is a case for comparison of probabilities. If the approximate generalizations leading to the affirmative are, when added together, less strong, or in other words farther from being universal, than the approximate generalisations which support the negative side of the question, the proposition is said to be improbable, and it is to be disbelieved, provisionally. If, however, an alleged fact be in contradiction, not to any number of approximate generalisations, but to a completed generalisation based on a rigorous induction, it is said to be impossible, and is to be disbelieved totally."

Now we maintain that vaccino-syphilis is precisely in the position described in the last paragraph of the above, and we therefore take our stand with M. Jules Guérin (in his final speech at the Academy) in the position of total disbelief; for we hold that the asserted existence of vaccino-syphilis is supported only by approximate generalisations, and is in contradiction to a completed generalisation grounded on a rigorous induction.

We have been surprised that this position of the argument should have so largely escaped attention. Let any intelligent person read over the headings of the evidence against the possibility of vaccino-syphilis which we have above enumerated, and he will see that the conditions of a rigorous induction have been fulfilled with a completeness rarely possible in medical science. In particular, the *experimentum crucis* of intentional vaccination from syphilitic individuals, performed many hundreds of times by distinct and independent observers, and with perfectly negative results, is a most fortunate circumstance, which could hardly have been hoped for,[1] but having occurred, carries extraordinary weight, from the great certainty we possess that, had syphilis been present in the lymph, it *must* have been inoculated in many cases, for syphilis is one of the most inoculable of poisons. Further, the argument from analogy supplied by the fact (which has been ascertained over and over again) that even the *poison of small-pox* does not enter the lymph of a Jennerian vesicle, developed in a person who had been vaccinated too late to prevent small-pox, which was already incubating in his system, is of tremendous strength. For as Simon remarks, the system is here "drenched with the subtlest infection" known to the physician—the infection of small-pox—yet the fluid in the vaccinal vesicle remains absolutely free from the power to communicate that infection to another organism! Add to these considerations the fact that men like Marson, Tomkins, Acton, Erasmus Wilson, &c. &c., whose experience of infantile syphilis and of vaccination is something fabulously large, have *never seen* vaccine syphilis, *but have often seen cases falsely so called, which broke down on investigation*, and that one such case as this actually deceived for a time so very able an observer as Mr. Lee. Add all these things together, and we have reasons for the direct disbelief of the asserted vaccino-syphilis, to invalidate which it would be necessary to produce evidence of such a strength as we are totally incapable of imagining.

Let us test the asserted instances of vaccino-syphilis by the rules of logical inquiry. The first requirements we should make, in admitting these cases as evidence, would be (1)

[1] The traditions of English physicians would scarcely have permitted them to carry out this experiment.

that syphilis of the most unmistakeable kind should be shown to have followed vaccination with a particular lymph, and that in a sufficiently large number of subjects to eliminate the fallacy which might otherwise be caused by the existence of latent syphilis, in the sufferers, previously to the vaccination; (2) that every step of the operation and its consequences should be traceable throughout; (3) that the lymph which is supposed to have carried the infection should be traced back to a syphilitic person as its source; (4) that being so traced, it should be shown to have been taken from a true Jennerian vesicle which had not degenerated; (5) finally, that it should be proved, with a high degree of certainty, that none of the more ordinary sources of syphilitic inoculation, such as the accidental use of a lancet foul with syphilitic matter, could have caused the infection. Now if we take the celebrated Auray epidemic—by very far the most striking and the most completely investigated of the alleged instances of vaccino-syphilis—what do we find?

Epidemic of Auray (1866).—Vaccine lymph between two glass plates was sent from the prefecture of Vannes to a *sage femme* of Grandchamp: she vaccinated with it two children, neither of whom showed any evidences of syphilis, either before or after, though each of them had troublesome inflammatory action at the site of the punctures. One of these children served as the vaccinifer to a third. This latter child was employed to furnish lymph to more than eighty infants; she was apparently well and strong at the time, and subsequent examination afforded no evidence that she had suffered syphilis either before or after the vaccination. But among the eighty children for whom she furnished lymph, a large number suffered from serious symptoms; moreover, two of them having furnished lymph to a second series (probably not quite so large as the first), the children of this series were also extensively affected in a similar manner. The first vaccination with lymph from Vannes took place on May 21st; the Government Commissioners—MM. Depaul and Roger—examined as many of the affected children as they could find (42 of the first series and 17 of the second) on the 19th and 21st of August, and also received the informations of the local physicians who had attended the children at an earlier stage. They concluded (1) that many of the children examined by them were genuinely affected with secondary syphilis; (2) that it was impossible to account for their contamination otherwise than by the vaccination; (3) that the source of the syphilitic virus was probably in the vaccine lymph originally sent from Vannes.

Now, on analysing this history and the details of cases given by MM. Depaul and Roger,[1] we note the following important points:—(1) That there is a complete absence of any chain of etiological facts leading us up to the original source of infection; the lymph which vaccinated the first series of 80 cases having previously passed through two vaccinifers, *who were, and who remained, free from*

[1] Bulletin de l'Acad. tome xxxii. pp. 201 *et seq.*

signs of syphilis. (2) Many of the cases, as described, afforded symptoms[1] which might well have been caused by a non-syphilitic and merely *irritant* lymph. (3) Mucous tubercles of the skin, which are among the most common symptoms of infantile syphilis, especially about the ano-genital region and the angles of the mouth, seem to have been completely absent *in nearly all the cases.* (4) Among all the 59 described cases, we do *not once find mentioned* the simultaneous presence of copper-coloured spots, mucous tubercles at the anus, and "snuffles;" yet this tripod of symptoms is, according to our experience, present in the majority of cases of infantile syphilis. (5) To conclude our criticisms on the cases reported by MM. Depaul and Roger, we must insist that *only a very few indeed of them* present symptoms that point at all to the diagnosis of syphilis; and the only phenomena that are common to the majority of the cases are such as might well have been caused merely by an unusually *irritant* lymph. Note here two facts:—first, that the lymph from Vannes was (from collateral evidence) very probably taken either directly, or at short genealogical distance, *from the heifer*, and that such lymph is well known for its *acrid* properties; and secondly, that while it failed to *syphilise* either of the two first vaccinifers, or the girl who was vaccinated from one of them (and then became the source of lymph for the series of 80), *it did excite suppuration and ulceration in all these three.*

But the Auray case is by no means concluded by the original reports of MM. Dupaul and Roger. Subsequent inquiries have revealed the following important facts:—(1) Of 127 cases in which syphilitic symptoms were supposed to have presented themselves, 30 were specifically treated, and these all got well. But (2) *The remaining* 97, *who got no treatment at all, equally recovered, without an exception.* And quite recently, more than three years after the original vaccinations, M. Eugène Bordais recovered the histories of 70 of the children who suffered in 1860, and ascertained that they were still all of them alive, except two, *and these two had died of diseases quite unconnected with syphilis.* Is this a history of infantile syphilis? We ask the reader to turn to any of the standard treatises on that affection; he will find it uniformly described as a most mortal disease! It is true that an attempt was made, in the discussion at the Academy, to explain this anomaly by suggesting that inoculated syphilis was probably milder than the inherited disease. But Ricord, from the stores of his immense experience, instantly refuted this theory; and his denial is fully borne out by what we have ourselves observed. Accidental inoculation of syphilis upon infants, by the mothers or the nurses, is capable of producing most fatal effects, when neglected.

Upon the whole evidence we say, decidedly, that it is not proved that the epidemic of Auray was *an epidemic of syphilis at all*, far less that it was an epidemic of *vaccino-syphilis.*

It would be easy to show that if the evidence of vaccino-syphilis be weak in the instance of Auray, it is far weaker in the other cases which have been mainly relied on: especially in the great Rivalta case, it is so completely wanting in scientific fullness of detail, that we are at a loss to know how the commission

[1] Ulcers, with more or less induration of the base, at the site of the punctures; enlargement of axillary and cervical glands; roseola, which may have been non-specific for anything that appears; scattered pustules, with nothing diagnostic about them.

of Italian physicians could ever have committed themselves to an acknowledgment[1] of the vaccinal origin of the disease. An epidemic of syphilis there certainly was : but there is not a tittle of proof that vaccine matter was the vehicle of this contagion.

Surely we need not insist that such evidence as the above, even if it were adduced by a thousand independent witnesses, would have no logical value whatever as an answer to the induction by which it had been decided that vaccine as such cannot carry syphilis with it into the system. That a syphilised lancet used for vaccination might convey syphilis instead of cow-pox is true enough. That an extreme degree of carelessness—such as first selecting a syphilised infant as vaccinifer, and then taking up *blood* as well as lymph on the lancet —might convey syphilis to the recipient, is just possible, though in no way proved. But this is perfectly irrelevant to the performance of vaccination by practitioners of ordinary skill and carefulness. Such men are aware that it is a grave fault to take lymph at all, except from a subject believed to be healthy, and from a vesicle presenting the perfect form and clear opaline tint of the true Jennerian vesicle at the stage of its development which Jenner assigned as the appropriate time for transferring its infection ; and they know, moreover, that it is an inexcusable blunder to extract blood, or anything but the pure lymph itself. And we may conclude this part of the subject by saying that of all the mistakes which comparative inexperience might lead a vaccinating surgeon to make, none are so easy to avoid, or so likely to be avoided, as those which by an extreme hypothesis are supposed capable of propagating infantile syphilis. In short, vaccino-syphilis is a bugbear and a phantom.

The considerations which have now been urged appear to us to amply acquit vaccination of causing any *mischief* whatever when reasonable care has been taken in its performance ; and this acquittal cuts their main support from under the feet of those who object to compulsory vaccination on the score of tyranny. They also throw strong light upon some probable

1 The whole evidence about the Rivalta case, as recorded, is a mass of confusion. But it is shrewdly remarked by Dr. Seaton (Handbook, p. 334) that long before vaccination was heard of, Astruc recorded epidemics of syphilis which were to the full as disastrous, and as unaccountable, as that of Rivalta.

sources of such *imperfectly protecting* vaccination as still exists in this country, since they suggest several ways in which the want of special knowledge and study of the nature and course of normal vaccination may cause some vaccinators to be satisfied with imperfect results. But before we proceed to the final consideration of the appropriate means for improving the quality of our vaccinations, we shall here adduce some further evidence, which has just reached us, showing how little influence even these defects in the quality of the vaccination exert in checking the steady progress towards extinction of small-pox which is observed when once compulsion is thoroughly carried out.

On application to Dr. Seaton, of the Privy Council Office, we have been courteously supplied with the facts concerning vaccination in Scotland and in Ireland. In the former country there was no Vaccination Act prior to 1863. The average yearly deaths from small-pox in the twelve years 1853–64 were 1,054; in 1865, 1866, 1867, and 1868, respectively, they were 175, 200, 124, and 25. Not to enter into unnecessary details, it may be stated that the Scotch Act has proved extremely perfect as a measure of compulsion pure and simple, and that ample documentary evidence exists to show that it really reaches all but a trifling fraction of the population. But it has three serious defects: (1) it allows too long an interval between birth and the performance of vaccination (six months); (2) as it does not provide public vaccinators, it at once inflicts unnecessary inconvenience on parents, and also neglects an important means of providing for a copious and constant supply of lymph under the best conditions; (3) finally, it contains no provisions for the inspection of the *quality* of the vaccinations (a most important and effective part of the English system), and no machinery (as it is not retrospective in its operation) for ascertaining the condition of persons born before January 1, 1864.

In Ireland, compulsion was not practically adopted before 1863. Vaccination was then made compulsory, within six months from birth, or persons born after January 1, 1864. The working of the Act is a triumph of administration; for notwithstanding that the law did not *compel* the local authorities to see it enforced, the Irish Poor Law Commissioners patriotically determined to carry it out: and they have put such pressure on the local boards of guardians and magistrates that the practical result so far is this: of 140,000 children born annually, more than 110,000[1] are *publicly* vaccinated, and the average is yearly increasing. *Private* vaccination no doubt affords protection to a considerable number, but not nearly all, of the remaining 30,000. The results upon small-pox mortality are striking and unmistakeable. Whereas in the periods 1830–40, 1840–50, and 1850–60, the respective annual average mortalities had been 5,800, 3,827, and 1,272; in the years 1864, 1865, 1867, 1868, they were 854, 347, 187 20, and 19, respectively: in the first quarter of 1869 there were only three deaths, and in the second quarter *none*. There is great reason to believe that in Ireland the quality of the vaccinations is very high, as the system is practically worked by the Poor-law physicians (a vastly superior class to their oppressed and underpaid brethren in England), by the machinery of the very effective Irish dispensary system. Nevertheless, as in Scotland, the want of

[1] As against 25,000 before the compulsory Act was passed.

retrospective power prevents the Act from bearing on persons born previously to 1864. Secondly, the Act is inferior to that of Scotland in not providing adequate machinery for tracing defaulters.

The general results as regards Scotland and Ireland are: (1) that in Scotland nearly all the population born since January 1864 have been "vaccinated," but there is no certainty how far this vaccination was complete and effective; (2) that in Ireland the population (born since 1864) is less completely vaccinated, but the quality of the vaccination is probably, though not certainly, higher than in Scotland; (3) that notwithstanding the respective defects of the two systems small-pox has *steadily diminished, and is at present nearly extinct in both countries;* but that (4) in consequence of the defects above enumerated, there is, doubtless, in both countries, a considerable number of unprotected persons, who, in the event of an accidental importation of virulent small-pox from a foreign source, would form a nucleus for epidemic extension, though this would probably be very limited in comparison with those of former years.

And now, at length, we are in a position to give a final answer to the question, whether vaccine lymph degenerates by the mere fact of prolonged humanisation. That answer must be a *direct and absolute negative;* for it is impossible that, in face of the enormous difficulties which have opposed the complete diffusion of efficient vaccination, such magnificent results as those now detailed should have been achieved, had there been any continuous degeneration of the lymph itself; and these results upon the broad scale are rendered tenfold more striking when they are placed side by side with such an *experimentum crucis* as is afforded by the absolute protection, during thirty years, given by first-rate vaccination to all the nurses exposed to the unique ordeal of continuous waiting on the sick in the Small-pox Hospital.

Upon no reasonable grounds can it be any longer denied that the compulsory extension of efficient vaccination to the whole population opens the sure road to the extinction of small-pox. Upon no reasonable grounds can it any longer be pretended that vaccination cannot be made absolutely harmless. Either, then, the State has no duties towards the citizens in respect to their health at all, or two of its most important duties are, to provide compulsory vaccination and to see that it is properly performed. Compulsion is perhaps sufficiently attained by the Amended Vaccination Act of 1867. The efficient performance of vaccination must form the topic of our concluding remarks. We may fairly leave to the Medical Department of the Privy Council the consideration of any possible modifications in the machinery of organization. But in regard to the effective performance of vaccination—such performance, namely, as shall give the

maximum of protection—there are two series of facts which cannot be too often or too emphatically repeated at the present time. The first is, that the official inquiries made on behalf of the Privy Council prove distinctly that some vaccinators are culpably careless as to the two prime necessities—(*a*) of producing a large amount of local infection, and (*b*) of satisfying themselves that the cicatrices left are of the true Jennerian type.[1] The second is, that without the observance of these precautions the protective value of vaccination is greatly deteriorated. Upon the former point evidence which is far too copious for reproduction here will be found in Dr. Seaton's Handbook. Upon the latter, there needs no other testimony, though plenty could be produced, than the following table of Marson's extensive observations. In 5,000 cases of so-called post-vaccinal small-pox, observed at the Small-pox Hospital in the years 1836–55, the following particulars were noted:

Classification of patients affected with small-pox.	Number of Deaths per cent. in each class respectively.
1. Unvaccinated	35·
2. Stated to have been vaccinated, but having no cicatrix	25·57
3. Vaccinated—	
a. Having one cicatrix	7·73
b. Having two cicatrices	4·70
c. Having three cicatrices	1·95
d. Having four or more cicatrices	0·55
α. Having well-marked cicatrices	2·52
β. Having badly-marked cicatrices	8·82
4. Having previouely had small-pox	19·

The whole story of good and of imperfect vaccination is told in these striking figures. The medical profession may well afford to disregard the monstrous fables and absurd alarms which are circulated from time to time, as to the conveyance of horrible infections by the medium of vaccine lymph. But in regard to their slackness in adopting, to the fullest extent, the standard of excellence in vaccination, for preventive purposes, which has been laid down by the best authorities, they have much to answer for. Let them look to it, for their credit is at stake upon a matter of infinite importance, as to which the public, when they know the facts, are not likely to be lenient judges.

1 A depressed cicatrix, *foveated*, i.e. pitted with numerous depressions, corresponding, doubtless, to the cellulated structure of the true Jennerian vesicle.

Reviews.

Scarlet Fever and its Prevention. By Fred. Smith, Esq. Malvern: H. Cross.

In this little pamphlet Mr. Smith seeks to reply to an appeal recently made for a simple remedy, generally available and easily carried out, for preventing the spread of this disease. He notes the fact that, on the authority of Watson, West, Budd, and others, no definite time can be named at which persons who have gone through the disease can safely mix with others, and therefore insists on the advisability of allowing no means to be omitted which are known to exert a disinfectant power, or which may tend to limit its extension; and then he embodies in several sections, including, 1. "What should be universally known;" 2. "The duty of parents;" 3. "Directions to nurses," "Public schools' suggestions," and "Duty of local authorities." We think his proposals, which, however, contain little that strikes us as new, are sensible, and if fully acted on would no doubt materially diminish the spread of scarlet fever. He suggests that a Scarlet Fever Conference should be held by the head masters of all the large public schools, at which the whole subject should be fully discussed.

Pharmacological Studies on Quinine. By C. Binz. Virchow's Archiv, Bd. xlvi. pp. 67—105, 129—168.

These eighty pages form the continuation of the work of the author which we have already quoted on the same subject. He begins with an historical introduction, in which the opinion of our countryman Pringle (Royal Society, November 21, 1750) is discussed. Binz, however, did not know these views when he found out that quinine is a powerful antiseptic, more powerful even than arsenic. The experiment made with three solutions (1 to 500) of hydrochlorate of quinine, of white arsenic, of arsenite of potash, and small cubes of roasted meat is described. Then the theoretical doubts which arose against the above-named assertion, because quinine, under certain circumstances, is itself subject to *mould*, are accurately discussed and confuted by a series of experimental demonstrations. *Neutral* solutions of

quinine never mould, but only acid ones, and sulphuric acid most particularly predisposes to it. The best way of administering quinine is in the form of the hydrochlorate, which is easily soluble in fifty parts of water, and therefore has no need of acid, and does not trouble the stomach as the sulphate does, which is soluble only in 750 parts.

A series of difficult experiments on septicæmic dogs shows us that quinine is also an antiseptic remedy for internal states, as Pringle, in fact, had already supposed. Amongst the twelve animals treated with quinine, there was not one case that was entirely unsuccessful. An animal made ill by the same putrid matter served each time as a control. Three under the influence of quinine were finally saved; the nine other subjects either died later, either of the septicæmia, or else not of the signs of putrid decomposition, but of symptoms which arose from the other poisons contained in putrid liquids.

A letter of the celebrated physiologist Helmholtz, which Binz publishes, may be of great interest, especially to the English medical world. Helmholtz suffered for twenty years from "hay fever." In recent years he discovered vibrions of a peculiar sort in the secretions of his nose. After becoming acquainted with Binz's experiments, according to which all inferior organisms are easily destroyed by quinine, he made the trial on himself with a solution of 1 to 750. He injected it into his nose, and found that the dreadfully troublesome symptoms of hay fever disappeared directly. Next year (1868), as soon as the illness showed itself, he again injected the quinine, and the development of the disease was suppressed. He supposes that the vibrions, of which he gives a sketch, are, perhaps, the cause, or at all events a complication, of this specific catarrh. The fact that the vitality of a great many infusoria is bound to certain seasons and periods of the year argues for the former idea, as also do the other circumstances of the case. If the local application of quinine is to be of use, it must, as Helmholtz particularly mentions, also cleanse the little corners and recesses of the nose proper, as the vibrions seem chiefly to be there.

Strong solutions of quinine, simply in water 1 to 100, without any additional syrup, &c., seemed just as successful in several cases of hooping-cough which Binz thus treated. He attributes this success to the effect which quinine, when being swallowed, had on the irritating mucus which fills the pharynx and upper part of the throat, and occasions the spastic irritation of the vagus. Hooping-cough is infectious, which can, however, only be accounted for by the nature of the phlegm. If it is chemically changed, the symptoms caused by it stop. Binz formerly proved that quinine energetically disturbed the elements of all mucus; yet he says that a greater number of successful cases

than he himself has observed are necessary to fully assert the healing power of quinine for hooping-cough.

In the second part of his experiments Binz shows that some substitutes for quinine, used in intermittent fever, possess antiseptic and antizymotic power as well. They have, too, the same effect upon the white blood-corpuscles as he formerly proved quinine itself to have. Only cinchonine, bebeerine, and picrate of soda were tried, as still mostly used. All that is as yet known about the antiphlogistic effect of quinine is then summed up. A number of experiments follow, which prove that quinine hinders, in a special manner, the formation of ozone within organic fluids. We cannot give an extract of them, as they must be examined in detail. Researches of G. Harley are also quoted. From all this it follows, that as yet it is unnecessary to take the nervous system into *direct* account to explain the mode of action of quinine, particularly as there is not a single experimental proof on higher animals to demonstrate its co-operation. Binz, however, does not wish to exclude the possibility of it.

In conclusion follow some researches upon the appearance of quinine in urine, and upon its remaining in the body. They show that it goes through the blood, the greater portion unchanged, and after two days is still present. This persistence in the organism is one of the causes why quinine acts so favourably; another one is, its being generally so harmless, even when taken in large quantities. Other substances also operate chemically on ferments, white puriform cells, &c., as well as quinine—strong mineral acids, arsenic, bichloride of mercury, camphor, alcohol; but they are either strong poisons, or are decomposed too quickly in the blood. (Carbolic acid may be said to be most like quinine.) It is only in this sense that quinine seems to be a specific remedy.

Clinic of the Month.

Therapeutic Value of Milk.—Dr. Donkin commences in the *Lancet* a series of papers on the therapeutic properties of milk, and in the one now published gives an historical account of the estimation in which it has been held by various physicians of eminence. He considers that since the dawn of modern pathology the dietetic treatment of disease as a branch of therapeutics has been woefully neglected. He points out that milk is an animal secretion destined exclusively for the purpose of food, this being its *only function;* that it is employed as the food of *all* young mammals, however varied their subsequent food; that it is much more easily digested and assimilated than any other alimentary substance with which we are acquainted; that it requires no cooking, and that it may be justly regarded as a natural device for the transference of the blood of the adult mother into the vascular system of the young mammalian—*a kind of natural transfusion.* It is further of importance to remember that substances extraneous or foreign to its composition can be introduced into it through the food of the female secreting it, so that it may be made to act medicinally or toxically on those consuming it. It appears that in Italy in the latter part of the fifteenth century meadows were specially cultivated to serve as pasturage for animals kept to yield milk for invalids. Each sick person was allowed a cow, a goat, or an ass, according to the nature of the case: this he led to graze on the particular spot on which grew the plants best suited for his malady. (See *Lancet*, Oct. 16.)

The Treatment of Rickets.—In a good paper on the pathology and treatment of rickets, contained in the volume just issued of St. Bartholomew's Hospital Reports, Mr. Holmes Coote arranges the treatment under three heads: first, the hygienic; secondly, the therapeutical; and thirdly, the mechanical. Of all measures, Mr. Coote thinks the most important is the removal of the child to some country district where the air is pure and the soil dry; the sea-side being in most cases to be preferred. The patient, lightly but warmly clad, should pass the greater part of the day out of doors, and no severe mental work be permitted. The diet should be light and nutritious; it should

consist chiefly of milk and farinaceous food, of fruit and vegetables; meat should be given sparingly, and never when the breath is foul and the bowels disordered. Mr. Coote objects to tonics during the acute stages of the disease, as also to the use of cod-liver oil and other similar preparatians which the stomach seems to reject. The child is in a state of low feverishness, which militates against the absorption of stimulants or the proper assimilation of food. Whenever the bowels are out of order, the alimentary canal should be cleared by the use of gentle purgatives, such as rhubarb and magnesia, or rhubard and grey powder, or a dose of castor-oil. The state of heat, thirst, and general derangement may be greatly controlled by the administration of very small doses of tartar emetic. At the Orthopœdic Hospital, where this practice is largely carried out, the following formula is given:—Liq. antim. potassio tartratis ℥j, aquæ distill. ℥j; one drachm three times a day. Children of four or five may take two drachms. The medicine is continued for weeks or even months with good effects, the feverish symptoms being allayed, the thirst diminished, and the general nutrition of the body improved. There are times and circumstances which may render the use of cod-liver oil advisable, but the same benefits may usually be obtained by regulation, when possible, of the suitable articles of diet. As the acute symptoms subside, small doses of iron may be serviceable, and chalybeate waters offer a convenient and not unpalatable form. Quinine and other tonics may be useful in time. Mr. Coote then proceeds to observe that after the removal of febrile symptoms, and the re-establishment of healthy nutrition, the next most important indication is the prevention of deformity. After pointing out the difficulties that arise to prevent a child from being maintained in the recumbent position, he remarks that moveable couches, on which the patient can be wheeled about from place to place, are very desirable, enabling him to enjoy the advantage of change, and having by his side objects of amusement. For the treatment of genu valgum or genu varum the usual wooden splints with straps and buckles are applicable, while curviture of the spine will need stays strengthened with side steels, or the stronger apparatus of a pelvic band with steel crutches moveable by cog-wheels. These appliances are, however, ill suited to the very young, and are often injurious in the acute stages of the disease. The surgeon must be guided by his experience, for no definite rules can be laid down to suit each particular case. Mr. Coote finally states that when great curvature of the long bones, as of the tibia, remains in after-life, a condition productive of other and secondary deformity, benefit may be obtained by the removal of a wedge of bone by a subperiosteal operation, of which he saw a successful case

treated by Mr. Little. (See *St. Bartholomew's Hospital Reports*, vol. v. 1869, Oct.)

On the Employment of Harelip Suture in Vesico-vaginal Fistula.—Dr. Patrick Heron Watson records a successful case in which harelip pins were employed in the following manner. The patient, deeply narcotized with chloroform, was placed in the prone position, with the legs hanging down and secured, the fistula being exposed with a duck-bill speculum. Two curvilinear incisions were made through the vaginal mucous membrane, embracing the fistulous opening; and the tissue being dissected off as far as the vesicle coats, the vaginal was separated from the vesicle texture for a short distance. A pair of toothed forceps were then introduced up the urethra, and the fleshy margins of the aperture, now attached alone to the bladder, seized, and being drawn towards the cavity of the viscus, were kept away from the refreshed edges of the vaginal aspect of the fistula. Three four-inch acupressure pins were then introduced, penetrating the whole thickness of the vaginal tissues bounding the raw margin, the points of entrance and exit being more than half an inch from the edges of the opening. Thick silk twist was then carried round each needle separately with a straight-eyed probe, the edges of the wound being brought into apposition by gentle traction. When all three sutures were applied, not a drop of urine escaped. The vagina was guarded from the points of the needles by a narrow strip of lint. The patient was conveyed to bed, and a sigmoid soft-metal catheter introduced. Perfect recovery followed. Dr. Watson considers this method much superior to the tubular needle and silver wire operation. It appears, however, to have been a very favourable case for any form of operation in skilful hands. (See *Edinburgh Medical Journal*, Oct.)

Actual Experience in Hospital Practice of recently-vaunted Remedies.—Under this title Dr. D. M'Gregor gives the results of his observations obtained in the management of a workhouse hospital and asylum, containing from 1,000 to 1,300 inmates, of whom an average of 350 were under constant medical treatment. The remedies he selects for comment are: 1. Acupressure; of which, though his experience has been limited, owing to the comparative rarity of surgical operations requiring such means of arresting hæmorrhage, he is convinced of its great advantages over the ligature. 2. The treatment of cancer with injection of acetic acid: this he only tried in one case of scirrhus, the result being a signal failure—worse than failure, since it did harm by hastening the fatal issue. 3. Bromide of potassium. With this agent Dr. M'Gregor has had large experience, as 150 of the permanent inmates of the insti-

tution were insane, amongst whom were many epileptics. He speaks therefore with considerable weight, and his opinion is that he has never been able to *cure* a single case of epilepsy by this drug, though he has found it a most valuable agent in the mitigation of the disease. In several instances the disease appeared quite under its control, but after its withdrawal, however long it had been employed, it reappeared. He began with twenty grains three times a day, increasing it to the same quantity every two hours. The only ill effect observed were a papular rash on the face, with heat and itching, especially of the nose, and one case diarrhœa. 4. Blistering in acute rheumatism. Amongst the class of patients he has had to deal with articular rheumatism is very common, and whether accompanied by fever or not, and however swollen or painful the joints, he at once applies a blister to every joint seriously affected. Within twenty-four hours complete relief is obtained. 5. Carbolic acid. Of this he gives a general approval, but finds that caries of the bone cannot be resolved or cured by it. 6. Ether spray has been less successful than he anticipated, especially in the extraction of teeth. 7. Holt's dilator for stricture he used in four cases with perfect success, and does not think advantage has been taken so extensively as might be of its decided usefulness. 8. Iodide of potassium he found very useful in from twenty to thirty, instead of five to ten, grains, for secondary symptoms. 9. The sulphur cure, both by fumigation and by spray, for catarrh and bronchitis he had an opportunity of trying on himself, but after giving them both a fair trial experienced little benefit beyond a slight softening of the cough when the sulphurous acid spray was used. He found, however, that patients in advanced phthisis experienced great relief and comfort from its use when the throat was parched and dry and thirst severe. These remarks seem to us to be very sensible and very faithfully express our own opinion on the remedies mentioned. (See *Edinburgh Med. Journ.* Oct.)

The Buxton Waters.—Dr. Robertson calls attention to the value of the Buxton waters in cases of rheumatism and gout, and the various morbid conditions allied to these diseases in origin and character, The temperature of the water is 82° Fahr.; it is very abundant, not less than 300 gallons per minute, and is remarkable for containing as much as 504 cubic inches of nitrogen in the gallon. The course of baths comprises from ten to sixty; and the effect depends closely on the amount of friction that is used during the immersion.

Extraction of Fish-hook from the Œsophagus.—What has happened once may occur again, and the plan pursued in the following by-no-means-unlikely accident was at once

ingenious and successful. A woman swallowed a fish-hook to which a piece of string was attached. At the moment of swallowing she caught at the string, and fixed the hook about four inches below the commencement of the œsophagus. On examining the case Dr. Jonasson saw that for its safe extraction it would be necessary to devise an instrument which would dilate the œsophagus, and at the same time possess sufficient strength to dislodge the hook, with elasticity enough after dislodging to expand and prevent its point from again becoming entangled in the œsophageal wall. Having obtained one of the largest-sized gum-elastic catheters, the pointed end was cut square off. It was passed through a hole pierced in the centre of a piece of sponge, which was bound tightly to the cut end of the catheter, leaving about three-quarters of an inch of sponge free, the edge of this portion projecting about one-fifth of an inch beyond the end of the catheter; and in order to prevent it turning backward when introduced into the œsophageal opening, a thread was passed, by means of a common needle, in and out twice round the free edge of the sponge, and drawn sufficiently tight to prevent this, but without destroying its elasticity. An additional portion of twine was now added to that hanging out of the patient's mouth. The string was now passed up through the instrument, and this, with the sponge end downwards, was gently but firmly passed down the œsophagus until it reached that portion where the hook was fixed; at the same time sufficient tension was made upon the string, and when the end of the tube reached the hook, the shank was thus drawn into it; a little steady force directed downwards detached the hook, and another slight pull on the string firmly imbedded its point in the sponge, which expanding after its detachment effectually prevented entanglement during its extraction. The hook was found to be about one inch in length, and nearly three-eighths of an inch broad from shank to point. (See *Australian Medical Journal*, July 1869.

Extraction of an Artificial Tooth from the Œsophagus. Mr. Dearden relates a case in which a false tooth with its gold plate was cleverly removed from the œsophagus. A probang was first passed for eleven inches, and the position of the tooth discovered. Mr. Dearden then attached to the probang above the sponge about twenty nooses of horsehair: these, however, broke, leaving the tooth in the same place. Better success attended the introduction of similar loops of fine steel wire. After a little careful management, and the employment of considerable force, the tooth was brought up entangled in the nooses. With the exception of a feeling of soreness for the first few days after the operation, and restricting himself to a

farinaceous diet, the patient felt no subsequent inconvenience. (See *Lancet*, October 16.)

Hypodermic Injection of Morphia for Vomiting.—Dr. Spender, of Bath, gives a series of cases in which the hypodermic injection of morphia proved useful in arresting obstinate vomiting arising from pregnancy, gastric disturbance and brandy-drinking. In each case one-third or one-quarter of a grain was injected under the skin of the arm with speedy benefit. (See *Brit. Med. Jour.*)

Toxic Action of Quinine.—A case is reported by Mr. E. Garraway, in which a lady, aged 40, was suddenly seized with œdema of the face and limbs, accompanied by an unusual erythmastous rash and considerable uneasiness at the præcordia. She attributed it to having taken a white powder, purchased at a chemist's, in mistake for quinine: on examination it proved to be sulphate of quinine. After three or four days the œdema and rash subsided, and desquamation of the skin occurred. During convalescence quinine was unreflectingly ordered. Two hours after the first dose, which only consisted of two grains, she felt ill, and all the former symptoms recurred. (Ibid. Oct. 9.)

Extracts from British and Foreign Journals.

Bromide of Potassium in Typhus, &c.—Dr. Porter observes that all practitioners must have occasionally encountered cases analogous to those described by Graves, when in the latter part of their course subsultus, long wakefulness, muttering, raving delirium, cold perspiration, and involuntary discharges show exhaustion of the powers of life and approaching dissolution. The condition is atonic, and forbids everything which is in its nature depressant or destructive to the tissues; and yet in such cases it is that in the absence of a better remedy the eminent physician just named recommends the use of antimon. et potass. tart. in large doses with opium. "But is there not a more excellent way, involving less risk, and one based upon accepted notions of antimony on the one hand, and the supposed powers of the bromide on the other?" asks Dr. Porter. "In such cases," he proceeds, "musk was formely resorted to and more recently camphor and chloroform, taken internally, have been used; but there is reason to believe that the bromide of potassium, in combination with morphia or opium and antispasmodics, is more effective, safe, and salutary." Dr. Porter adduces various cases of typhoid fever, hysterical delirium, and infantile convulsions, in all of which this combination proved extremely efficacious. He states also, that though he has not found the bromide possess any anodyne influence in the pain of true inflammation, *e.g.* in the formation of an abscess, it is very useful in reflex pain; also in hooping-cough, laryngismus stridulus, in spasmodic retention of urine and urethritis, and in headache resulting from passive congestion, when remedies directed to the stomach utterly fail. In isolated pathological states of the system like those named, also in spermatorrhœa, orchitis, palpitation of heart from reflex or sympathetic action, its sedative influence is obvious and important. Dr. Porter observed only a single instance of noxious or unpleasant effects. This occurred in a lady, whose system was unusually sensitive to the action of every medicinal agent, one-fourth of an ordinary dose being ample. Only four grains of the bromide would speedily produce numbness in the extremities, and shooting, burning pains throughout her whole system, both gradually passing off without other evil consequences. The fact was repeatedly tested, and always with the same result. (*Hay's American Journal.*)

Neurosis of the Stomach and Intestines.—Dr. Porcher, of Charleston, calls attention to a peculiar form of disease he has met with on several occasions, and to which he suggests the above name should be applied. The principal symptom complained of was severe pain in the upper part of the abdominal region, without tenderness or other symptom of inflammation. He considers that the essential cause of the whole trouble is to be found in the disturbance of nutrition, and consequent malassimilation of food, which protracted anxiety, distress, or doubt give rise to ; conditions that appear to have been present in all his cases. As a consequence of the imperfect digestion and assimilation of the food, anæmia results, which again deranges the functions of the nervous system. He attributes the phenomena to a "hyperæsthesia of the nerves of the gastro-enteric mucous membrane, or it may be an erethism, which is something more, caused by prolonged derangement of the digestive functions," in persons whose nervous power had become depressed by a "long train of agencies acting on the mind and feelings, these reacting upon the digestive and assimilatory organs, and deteriorating the blood." Dr. Porcher recommends quinine and iodine of potassium with muriate of ammonia as the most appropriate remedies. Dr. Porcher appends to his paper some notes of cases of hyperæsthesia, in which various drugs are employed without benefit—as quinia, hyoscyamus, aconite, strychnia, morphia, steel, &c.—but which were ultimately cured by large (scruple) doses of the bromide of potassium, in some instances combined with a little morphia. (*Hay's Amer. Journ. of Medical Science*, July 1869.)

Treatment of Hospital Gangrene.—Dr. Doughty observes that in reply to the question, How should hospital gangrene be treated? many surgeons answer, "Burn it out," as though, notwithstanding its constitutional features, it could only be eradicated by potential caustics, nitric acid, chloride of zinc, sulphate of copper, &c.: but recognising the importance of such applications to malignant growths and foul ulcers of every description, to which hospital gangrene bears a certain analogy, it may be asked whether this is the only available treatment, and its measure of success so great as to demand its uniform and exclusive adoption. Now, since there is no question that a constitutional element is present in the disease, this demands and should receive the greatest attention. Unless this is done, all local treatment, whether by escharotics, disinfectants, stimulants, solvents, simple dressings, or even removal by amputation, is unavailing. Of the internal or constitutional remedies, iron, chlorine, and mineral acids are the chief, and when given under favourable hygienic circumstances are comparatively certain in

their results. With these should be combined a fair allowance of a nutritious diet and fresh air. In regard to the local disorder, the dead tissues must be removed, local inflammation subdued, the foul surface thoroughly cleansed, its fetid emanations corrected, and the whole series of local circumstances, tending to foster and perpetuate the disease, must be broken up. As a local disinfectant, Dr. Doughty, whose experience during the civil war seems to have been considerable, found tar water extremely useful, probably from its containing small proportions of pyroligneous acid and creosote. He found also turpentine to be a good solvent for the putrid slough, hastening its separation and stimulating within safe limits the adjacent parts, exerting also, when internally administered, peculiarly beneficial effects upon the blood, being, when aided by good diet and tonics, even adequate to the cure of the disease. Dr. Doughty, appears to think that carbolic acid has no claims superior to those of chloride of sodium, permanganate of potash, pyroligneous acid, or creosote, nor in particular to those of tar water. (*Richmond and Louisville Medical Journal*, Aug. 1869.)

M. A. Cullerier, late Surgeon to L'Hôpital du Midi, gives for the abortive treatment of gonorrhœa large doses of copaiba —from four to five drachms a day. This is continued for four or five days after the discharge disappears. When the inflammatory stage is over, he uses the following injection to complete the cure :

℞. Sulphate of zinc, } aa gr. xv.
Sugar of lead, }
Water, f. ʒ iv.—M.
S. Inject twice daily.

Or, ℞. Alum, ʒ ss.
Water, f. ʒ iv.—M.
S. Use as an injection twice daily.
(*Baltimore Medical Bulletin*, vol. i, 16.)

Warts may be readily cured by cutting a hole in a piece of sticking plaster, the size of the wart, applying the sticking plaster so that the wart protrudes, and then using—

℞. Caustic potash, ʒ ij.
Gum arabic, ʒ ss.
Flour sufficient.
M. Make a paste.
S. To be left on for a few hours. (Ibid.)

Bromide of potassium is an invaluable remedy in pertussis. Dissolve one drachm in four ounces of water, and add from two to four fluid ounces of syrup of marsh mallow. Give one tea-

spoonful of this mixture to a child every three or four hours. (*Baltimore Medical Bulletin*, vol. i. 16.)

Sawdust pills would effectually cure many of the diseases with which mankind is afflicted, if every individual would make his own sawdust. (*Centralblatt*, No. 26.)

Action of Opium on the Uterus.—Dr. P. C. Baker observes that before the expulsive contractions commence, which terminate the process of labour, the circular fibres of the os and cervix must relax, whilst the longitudinal and oblique fibres of the body contract; irregular contractions of the different sets, or contractions of the circular fibres alone (constituting false pains), or rigidity of the os uteri due to contraction of its circular fibres, often prevent their physiological dilatation, and are the cause of much distress and annoyance. It is in cases of this kind that he found in opium a valuable parturient agent. In his first cases he administered morphia or opium simply, with the intention of affording a respite to the patient from the pains; but the results of his observations convinced him that whilst opium stimulates the fibres of the body of the uterus (longitudinal and oblique), it also relaxes the circular fibres of the os; that it has, in fact, a peculiar anodyne effect upon false pains; and he is fully persuaded that it never did or can arrest a physiological labour. On the same grounds he supports its use in cases of dysmennorrhœa dependent on spasmodic contractions of the circular fibres, or where it is owing to the presence of menstrual decidua clots, &c. And again in abortions, in which it facilitates dilatation, diminishes hæmorrhage, promotes the expulsion of the placenta, and lessens suffering. Ergot, on the other hand, he remarks, by causing contraction of the circular fibres, retains the placenta, and therefore should rarely be given (in abortion) until after the fœtus and secondaries have been expelled. In placenta prævia it meets two important indications: facilitating dilatation; and thus shortening the period of greatest danger; and secondly, promoting the expulsive power of the uterus. It also, he thinks, serves to lessen hæmorrhage by a special hæmostatic action. Lastly, he has used it with great advantage in cases of hourglass contractions, which he attributes to the use of ergot, and in which the use of opium is pronounced objectionable by many authorities. (*Philadelphia Medical and Surgical Reporter*, vol. xxi. p. 54, 1869.)

Clinical Investigation of Hysteria.—M. Chairou has read before the French Academy of Medicine a paper in which he has arrived at the following conclusions:—1. Whenever compression or inflammation of one or both ovaries occurs in a young woman, paralysis of the reflex movements of the epiglottis and

all the organs entering into the formation of the pharynx occurs. 2. Whenever these two phenomena occur simultaneously in the same person, the foundations are laid of a condition termed by the author the hysterical cachexia. 3. The hysteric fit is only the consequence of this reflex paralysis. The epiglottis is drawn down over the superior aperture of the larynx, and being unable to rise, symptoms of suffocation follow, with convulsions and the spasms which characterize the fit. 4. The asphyxia consequent on repeated attacks leads to a perversion of vitality in the form of various kinds of sensorial disorder and the anæsthesia which are known to occur in all hysterical patients. Finally, the treatment should be addressed directly to the functional disorders of the ovaries; it ought especially to be local, in order to induce resolution of ovaritis, the principal if not the only cause of all these disorders. (*Archives générales de Médecine*, Oct. 1869.)

Decotinized Tobacco.—Dr. Williams, an American physician, residing at Milwaukee, contributes an article to the *Chicago Medical Journal*, in which he states that it is not generally known that tannic acid decotinizes tobacco, and gives the following particulars, which will, we think, interest our readers. "If the bowl of a pipe is filled about one-fourth full of tannin, filled up with tobacco, and smoked, the aroma of the tobacco is almost entirely destroyed, and the smoker scarcely feels the effect of the tobacco on his nervous system. The experiment is more striking if a bit of sponge is saturated with a solution of tannin, and placed in the bottom of the pipe. The smoke of the first two pipefuls of tobacco will pass out as vapourless and innocent as the smoke of a child's rattan or grape-vine cigar, and as devoid of tobacco smell. The Turkish pipe, which is provided with a reservoir containing water, answers the purpose admirably. The place for water may be filled with a saturated solution of tannin, or what is better—as it prevents the unpleasant bubbling noise—a sponge saturated with the solution. By changing the sponge often enough, a person may smoke as immoderately as he pleases without any injurious effects, and it is particularly recommended to ambitious young gentlemen whom the weed in its natural condition 'makes sick.' I am not sanguine, however, that mankind will avail themselves of the advantages of this discovery. It will be like the Frenchman's antidote to the intoxicating effects of alcoholic potations—it destroys the very effect for which the poison is used! The North American Indians were wise, however, and availed themselves of this discovery hundreds of years ago. It is well known what inveterate smokers the Indians are, and still we never see any injurious effects of this habit upon them. This may be due in part to

their vigorous constitutions and hardy nomalic life, but it is mainly due, I think, to the form in which they use their tobacco. Until they learn the habit from the whites, they rarely or never use the pure leaf. Their 'Killikinnick'—the agreeable aroma of which, once inhaled in a wigwam or lumberman's cabin, can never be forgotten,—is composed of equal parts of tobacco and the inside bark of a species of the *Cornus coricea*. Sometimes the admixture of tobacco in it is not more than a fourth. This bark is astringent, and abounds in *tannin*, and therefore in a great measure neutralizes the effects of the tobacco. The fancy brands of smoking tobacco labelled 'Killikinnick,' sold by tobacconists in papers, it is needless to say, are pure tobacco, and have no real claim to the name. The Indian name for the particular species of swamp dogwood which they use for smoking is 'Kinnikinnick;' hence the name. As we learned the art of smoking from the American savages, it would be only showing proper respect to their tastes to take the weed as they do. They peel the inside bark of the shrub, dry it, pound it to a powder in their stone mortars, and then mix intimately with the crumbled tobacco."

In connection with the above subject, M. Armand has recently presented a memoir to the French Academy of Medicine, in which he states that water-cresses destroy nicotine, without impairing the aroma of tobacco, and he therefore reccommends that tobacco before being smoked should be moistened with a fluid of which the base is an infusion of water-cresses.

Thoracic Puncture in Hydrothorax.—Prof. Ziemssen remarks, that considering how commonly paracentesis of the abdomen is practised, it is remarkable how seldom the thorax is punctured, even in cases of double hydrothorax, though the effusion and distress experienced in the one case are incomparably greater than in the other. The reason of this is, probably, that the danger of evacuating fresh exsudate is much exaggerated, and, according to the author, without any grounds. It is true that in incurable affections it only acts as a palliative, but the same may be said of paracentesis of the abdomen for cirrhosis of the liver; and he gives an instance in which he tapped the thorax sixteen times running with good effect, each time prolonging life for several months. He considers the operation to be indicated in double hydrothorax, consequent on disturbances in the heart and lungs, or on tumors within the thoracic cavity, Bright's disease, &c., when the compression of the lungs has attained a sufficient degree to produce severe dyspnœa. The level of the fluid should reach that of the second or third rib in the standing posture. A grooved needle should first be introduced, the pain of which, as well as of the trocar,

may be abolished by Richardson's ether spray apparatus ; then the patient being seated, the trocar should be entered as usual, at about the sixth or seventh intercostal space in front of the axillary line, near the upper edge of the lower of the two ribs. The discharge of fluid takes place interruptedly during expiration only, especially towards the end of the operation, and air sometimes enters with a gurgling noise, but without producing any injurious effect. A piece of sticking-plaster should be placed over the wound.

New Food for Infants—M. Nestlé, of Vevey, has proposed the introduction of a new food for young infants, to which he gives the name *Farine lactée*. This food is composed of perfectly pure milk, evaporated in a vacuum at a low temperature, of bread which has been submitted to a high temperature, and of sugar. These ingredients are incorporated in certain proportions, calculated to produce a food of similar composition to human milk. The preparation is made into the form of small granules, of a yellowish-white colour. According to M. Barral, the food contains, in 1000 parts, 19-5 of nitrogen and 7 of salts ; it results that by diffusing 1000 parts of this food through 3000 parts of water, a milk is obtained which contains in 1000 parts 4·87 parts of nitrogen and 1·7 part of salts. Woman's milk contains 4·83 of nitrogen and 2 of salts : consequently the two liquids are very nearly identical in the proportion of their elements. M. Nestlé very justly observes, that for the nourishment of an infant nothing can fully replace the milk of its mother ; but when this natural food is unattainable, it should be imitated by something as similar in composition as possible. (*Pharmaceutical Journal*, October 1869.)

A New Cement.—The *Journal de Chimie médicale* states that an excellent cement may be made by dissolving 1 part of amber in 1½ part of bisulphide of carbon. This liquid is applied by a brush to the surfaces it is wished to unite, and on pressing them together the cement dries almost immediately. (Ibid.)

Iodized Milk.—This is a preparation which contains iodine in a state of such intimate combination, that its presence can be detected neither by the taste, smell, nor by the eye. The activity of the drug when in this state of solution is diminished, apparently because it is in combination with the protein-corpuscles of the milk, and as much as five times the amount may be administered that is ordinarily given of the solid substance. The greater part, two-fifths, of the iodine consumed in the form of iodized milk is again discoverable in the urine. Hager states that iodized milk appears to him to be the mildest form in which it can be given, being superior in this respect even to

iodized starch. He found that milk could be taken, containing from half a grain to as much as four grains at one dose without occasioning the least inconvenience. If the tincture of iodine be added to milk drop by drop, the milk quickly assumes a yellow colour; but it is only requisite to warm the fluid slightly and to agitate it gently, to cause the iodine, which at first is to some extent precipitated, to be redissolved. Iodized milk possesses the advantage of being capable of keeping for a week before it acidifies or spoils; the cream which rises to the surface can be again equably diffused through the milk by agitation. The mode of prescribing it is as follows:—

Lac iodatum,
M. Lactis vaccini opt. ʒ iij,
in vas vitreum vel porcellaneum ingestis et paulum calefactis sensim atque inter lenem agitationem affunde;
Iodi puri, gran. 15,
antea leniore calore solutum in
Spiritus vini rect. ʒ iij.
Mistura leniter agitetur, donec denuo albissima appareat.
A tea-spoonful contains about one grain of iodine.
(*Der praktische Arzt*, August, 1869.)

The Treatment of Prolapse of the Umbilical Cord.—An interesting paper on this subject appears in the *Praktische Arzt* for August, from the pen of Dr. Massmann. He has collected the histories of no less than four hundred cases, of which upwards of forty came under his own observation, either in private practice or as assistant physician to the hospital at Breslau. It appears that, from the statistics of Scanzoni, the proportion of cases in which prolapse of the umbilical cord occurs is as 1 to 254 births. The author, however, gives a much higher figure, estimating it at 1 to 123. It is absolutely most frequent in head presentations, but only because these are far more common than breech or cross presentation: the frequency of prolapse is *relatively* very much greater in the latter. It is especially liable to occur whenever the lower segment of the uterus is not fully occupied by the presenting portion of the child. Hence it is met with in cases where the head is high in the pelvis, or is directed more or less to one side. It is not the pelvis, but that contraction of the lower segment of the uterus which occurs in normal delivery, that keeps the umbilical cord from prolapse. The statement made by Fried and Schmidt, that a pelvis of great width predisposes to its occurrence, is incorrect, since it is precisely in these cases that the head rarely sinks into the pelvis. According to Michaelis and Hildebrandt, the chief

circumstances favouring prolapse are irregularities in the position of the child or head, and all circumstances occasioning great dilatation of the uterus, as hydramnios, twins, &c.; but besides these may be mentioned low attachment of the placenta, great length of the cord, previous prolapse of a small portion, premature birth. The death of the child, which occurs in 54 per cent. of the cases, according to Scanzoni, and in 45 per cent. according to Dr. Massmann, is not the result of cooling of the cord, but of the pressure upon it preventing the passage of the current of the aerated blood from the placenta: the child constantly dies asphyxiated. The accident is most dangerous at the symphysis, on account of the pressure being immediate, severe, and persistent. The treatment of prolapse of the umbilical cord of course consists essentially in protecting or removing it from pressure as quickly as possible. The former indication is fulfilled by the replacement of the cord, the latter by speedy delivery. Formerly the latter mode was always adopted; the former was first recommended to be adopted as a general rule by Michaelis. Inasmuch as the replacement of the cord involves the introduction of the whole hand, it is necessary that the os should be sufficiently dilated. If this be not the case, and the liquor amnii have not escaped, we must wait, and endeavour by slightly altering the position of the head to bring about spontaneous reposition. Hohl's recommendation is, whilst the head is descending during a pain, to keep two fingers pressed against the loop of the cord. But if it be found that even with unruptured membranes the cord is exposed to dangerous pressure, Hüter proposes that, providing the mouth of the uterus will admit the hand, to replace the cord, then to rupture the membranes and place the head in position. Pursuing this plan in ten cases, the author was fortunate enough to deliver ten living children. In cases, however, where the waters have been discharged, and the cord is prolapsed into the vagina while the head is low, the forceps must be at once applied and delivery effected. If, however, the head be still high and moveable on the brim of the pelvis, whilst the os is sufficiently dilated to admit the hand, replacement is indicated, the statistics here being that 73 children out of every 100 survive. If, on the contrary, the expectative treatment be adopted, and the attendant waits till the head is sufficiently low to admit of the application of the forceps, only 49 per cent. of the children are saved. When replacement of the cord is determined upon, it should be accomplished with the whole hand; the right being used when the loop is on the left side, and *vice versa*. Small loops may be pushed back with the tips of the four fingers, but larger ones cannot be replaced in this way. In such cases the author thinks it is most

advisable to collect the whole loop into a mass, supported on the tips of the fingers and hollow of the hand. The hand is then to be slowly passed into the uterus, firmly pressing all the time on the head, and care must be taken to introduce the cord completely over and beyond the head. Before being withdrawn, the hand should be twisted about one-fourth of a circle, so as to extract it through the opposite side of the pelvis. The normal position of the head and the complete occlusion of the lower segment of the uterus are the only means of retaining the replaced cord. Hence the head should, if displaced, be put into the normal position, and the hand should be retained in the uterus till it is felt that the lower segment of the uterus has firmly contracted, and the occurrence of this may be hastened by friction. If an arm present, this must be replaced either by itself or simultaneously with the cord. If a foot and arm present, the foot must be brought down. When the replacement is effected, the case must be left to nature, cramping pains being removed with a dose or two of Dover's powder. Often after reposition of the cord the uterus relaxes, and labour is stopped for several hours; and this is usually without danger to the child. The mere want of pulse in the cord is not a proof of the death of the child, and should not lead to neglect of its replacement. (*Der praktische Arzt*, Aug. 1869.)

Therapeutic Action of Cubebs.—The employment of cubebs is very common in this country, either alone or as an adjunct to copaiba in the treatment of gonorrhœa. The drug has recently been subjected to careful examination by M. Heidenreich, with a view of ascertaining whether it possessed the powers attributed to it, and in which of its constituents those powers resided. By treatment with ether he obtained an oleo-resinous material, the oil and resin of which he subsequently separated. He first experimented therapeutically with the oil, administering seven grains every hour for twenty-four hours. No particular effects were observed; there was no alteration in the urine, and only a slight sensation of heat was experienced in the stomach. The resin had the consistence of honey, and when taken in doses of from 7 to 90 grains, it produced a lively sensation of heat in the stomach, and rendered the urine irritating, at the same time increasing its quantity. He further obtained certain white crystals of cubebin destitute of taste and odour, which produced, when taken internally, no sensible effect. Hence M. Heidenreich concludes: 1. That the diuretic properties of cubebs reside in the resin; 2. That cubebin is inert; and 3. That the volatile oil only produces the irritation common to it with other essences. (*Journal de Pharmacie et de Chimie*, September 1869.)

The Uses of Carbolic Acid.—Carbolic acid is now so frequently prescribed in various forms and for various purposes that the following *resumé* drawn up by Mr. T. A. Readwin may be acceptable to some of our readers. "As a rule," he says, "it is better to dissolve the crystallized carbolic acid (Calvert's) in the proportion of one part by weight of the acid to six of glycerine (carbolate of glycerine). In this state it can be equally diluted to any degree of strength. In general: a *dose* of carbolic acid is one grain in an ounce of water; as a *gargle*, one or two grains to an ounce of water; as an *injection*, one grain to four ounces of water; as a *lotion*, fifteen grains to an ounce of water; as an *ointment*, sixteen grains to an ounce of benzoated lard; as a *liniment*, one part to twenty of olive oil; as a *plaster*, one part to three parts of shellac; the crystallized acid to be used as a *caustic;* the carbolate of glycerine, as above, use in one or two drops internally. Antiseptic oil for abscesses, one part of acid to four of boiled linseed oil; antiseptic putty, six spoonfuls of the antiseptic oil mixed with whiting. For disinfecting purposes generally, one pound of crystals to six gallons of water; fluid, one part to eighty of water; powder, one ounce of crystals with four pounds of slaked lime. For drains, one pound of the fluid carbolic acid to five gallons of warm water. Toothache is often cured with one drop of carbolate of glycerine; and diarrhœa arrested in half an hour with two drops in a wineglass of water. In all cases when the destruction of parasites is required, it is advisable to commence with very diluted carbolate of glycerine." (*Pharmaceutical Journal*, October 1869.)

Action of the Pancreatic Juice.—MM. Chauvin and Morat have lately re-examined the action of the pancreatic juice, and in a paper read before the Academy of Medicine state that generally their results agree with those of previous experiments, and that they found the action of the juice was not interfered with by the presence of gastric juice or of diluted hydrochloric acid, but that when introduced into the stomach, notwithstanding the presence of the gastric juice, all the three principal constituents of our food were acted upon. They also state that in a clinical point of view they obtained remarkable effects both with the juice and with the extract of the pancreas. (*Archives générales de Médecine*, October.)

New Tonic and Febrifuge.—MM. Ossian Henry, Alfroy, Duguet, and Perret have presented a note to the French Academy of Medicine on a new tonic and febrifuge, congeneric with quinine, the quinopicric acid. The authors state that there exists in the cinchonas together with quinine several active alkaloids, which for various reasons have not hitherto

been utilized; further, that these alkaloids, in combining with picric acid, may form a yellow crystalline or amorphous product, to which they apply the term quinopicric, which possesses properties identical, or nearly identical, with sulphate of quinine. Lastly, that the cheapness of this substance will allow the poor to benefit from the compounds of quinia. Its administration in three cases of intermittent fever was followed by a good result.

Notes and Queries.[1]

Two Cases of Carcinoma Uteri treated with Carbolic Acid locally.—Dr. Edwards, of Gloucester Crescent, sends us the following very important cases:—

"*Case* I.—Mrs. N——, aged 39, the mother of five children, a native of Jersey, the wife of a captain, first consulted me November 17th, 1868, for menorrhagia, the discharge being extremely offensive. On examination *per vaginam* I found she was suffering from extensive malignant disease of the uterus; the discharge was of the colour of a dark brown sanguineous fluid, and very offensive; the neck of the uterus was nearly destroyed, leaving the body of uterus open, all the symptoms of cancer being present; the urine also was highly albuminous. Her general health had been declining for eighteen months, and she had been under medical treatment, but no vaginal examination had been made. The treatment I commenced in the case was the internal administration of quinine, galic acid and opium, and locally cotton-wool pessaries saturated in carbolic acid, glycerine, and oil, the acid being in the proportion of one to eight of almond oil, and a liberal and nutritious diet recommended. This treatment was continued up to January 7, 1869, when I was summoned in haste, and found her insensible, convulsions occurring during the night; and on the next day the nurse informs me partial sensibility returned, but no water had been passed for some eighteen hours. I at once introduced a catheter, and found the bladder empty. I immediately changed the treatment; drycupped over the loins, ordered hot fomentations and salines with 10-minim doses of Tr. digitalis; the suppression of urine continued till the 11th, when some water was discovered in the bed; insensibility continued more or less up to the day of death, 17th February, when another convulsion came on, and she expired in the evening. For some days previous to her death there was anasarca.

[1] The Editor, being desirous of making this department a useful medium of communication between practitioners, will be glad to receive short notes on theoretical or practical points in therapeutics,—brief jottings on those numerous queries which suggest themselves from time to time to a medical man as he "goes his rounds," but which he has neither the time nor, in some cases, the opportunity of answering. The Editor does not pledge himself to reply to every question addressed to him, but he hopes to make the "department" the means of supplying the information required; and this he can only effect by the hearty assistance of his readers.

"*Case* II.—Mrs. B——, aged 41, a plethoric and healthy-looking woman, first came under my notice September 6th, 1869, suffering from severe pains in the abdomen and a vaginal discharge. She states she has two children, and has been in excellent health up to four months previous. On examination *per vaginam* I found her suffering from cancer; there was profuse hæmorrhage on her exerting herself. I ordered an injection composed of one part of carbolic acid, glycerine ʒj, and ʒxx of water. This was used two or three times *per diem*, and continued for some days; and I applied daily a cotton-wool pessary saturated in carbolic acid, tannin, and glycerine, the strength being one acid to sixteen parts of water. This treatment appeared to be doing good in every way, the discharge being less, and much less offensive. The friends could hardly believe the disease was so terrible as I described, and consequently Dr. Meadows was requested to meet me in consultation, which he did September 16th, confirming the diagnosis, and the same treatment was recommended to be continued. The pain materially subsided, and a decided improvement appeared to be going on until September 27th, when there was hiccough and sickness; prussic acid and salines relieved this, with a blister to epigastric region. On October 2d she was seized with rigors, the extremities being very cold; and on October 3d I found her partially unconscious, the face œdematous, and the legs much swollen; no water passed. October 4th, no better; very delirious during night; no water—bladder empty on catheter being passed. October 5th, hæmorrhage returned, anasarca considerable; insensibility at times, but could be aroused. At 10 P. M. I drew off about two ounces of bloody urine.

"These symptoms increased in severity, when Dr. Meadows again saw the patient with me on October 8th, and he considered her decidedly worse; and on the 10th a little more urine was passed, and on the 11th she expired, coma being present; but she could hardly be said to be totally unconscious until a few hours before her death."

[We need scarcely point out the serious importance of the above cases. In proportion as carbolic acid becomes, and with justice, a more and more popular agent, it will behove us to inquire very closely what are the dangers attending its use, and how they may be avoided. It has long been known that the acid is eliminated by the kidneys even when externally applied; it would now appear that this process may sometimes involve such serious results as acute and fatal nephritis and uræmia.—ED. PRACTITIONER.]

TREATMENT OF PUERPERAL CONVULSIONS.—Mr. H. Allbutt, of Leeds, writes to us:—"The following case may present

interest to the readers of the *Practitioner* as to the most successful treatment of this formidable affection. Mrs. H——, a young woman, aged 23, of good strong constitution, but rather plethoric, consulted me first on September 21st. She was suffering from epileptic fits, which increased in violence and frequency day by day. I treated her to 15-grain doses of the bromide of potassium with marked effect till October 1st. On that day I attended her in her first labour. I administered chloroform to her by inhalation at the commencement of each pain, on account of the rigidity and slow dilatation of the os uteri and perinæum. This, I believe, prevented her having puerperal convulsions at or immediately after labour. About three days after convulsions came on in a most fearful manner, and increased to such an extent that the patient seemed to be at one time upon the point of death. Mr. Seaton, of Leeds, saw the case with me, and we agreed to apply eight leeches to the forehead. Turpentine injections were ordered ; the patient was put again upon a course of bromide of potassium, and a light but nutritious diet ordered without stimulants. By the above treatment she was brought round, and is now progressing favourably towards recovery. I believe that in such affections we have three great remedies, viz. bleeding, turpentine, and bromide of potassium, and upon these I shall be disposed to rest in all future cases for a favourable result. In case, however, anæmia be present, bleeding should be cautiously performed (if at all). Here turpentine, both by mouth and rectum, with bromide of potassium, and supporting diet may be employed. By these means we may hope to save many valuable lives, and lessen the present mortality from such cases."

Arsenic in Cholera.—"E. J. W." writes the following:—"In Dr. Ringer's Handbook of Therapeutics, p. 191, is the following passage: 'The testimony in favour of the employment of this remedy (arsenic) in cholera is very great. It is especially recommended in the later stages of the disease, when there is much collapse.' Will some reader of the *Practitioner* favour me with pointing out in your pages the work or works containing this 'testimony?'"

Bromide of Potassium in Tetanus.—Dr. G. F. Elliott, of Hull, writes as follows:—"In the June number of the *Practitioner* reference is made to a case of tetanus treated by bromide of potassium. A few weeks ago I was called into the country to see a case of tetanus, the result of a scalp wound in a child nearly four years of age ; there was marked opisthotonos, and the jaws were so tightly closed that very little nutriment could be taken. I was not likely to see the child again, and

the ordinary medical attendant also lived a little way off. Under these circumstances, and bearing the case you refer to in mind, I thought the bromide would be a safer remedy to leave in the hands of the attendants than any of the drugs ordinarily used in the treatment of tetanus; I therefore advised it to be given in 10-grain doses every hour. The gentleman whose case it was kindly furnished me with notes, and from these I find that for two days there was marked improvement, an absence of all spasm until the evening of the second day of taking the bromide: during this time the pulse became slower and firmer, and fluid food was freely taken. The spasms returned, however, on the evening of the second day of taking the medicine, and alternated with epileptiform attacks until his death, which took place on the fourth day after I saw him. Although the improvement in this case was only temporary, yet it was so marked, I cannot help thinking that, taken in connexion with the case reported from Carlisle, it seems to warrant further trial of this drug in tetanus. In case you may think the thing worthy of note, I have much pleasure in mentioning it."

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[1] Any of the foreign works mentioned below may be procured by application to Messrs. Kelly, Piet & Company, 174 Baltimore Street, Baltimore.

THE PRACTITIONER.

DECEMBER, 1869.

Original Communications.

SOME OBSERVATIONS RESPECTING THE INFLUENCE OF CHLOROFORM, ETC. IN PROMOTING CUTANEOUS ABSORPTION.

BY AUGUSTUS WALLER, M.D., F.R.S., OF GENEVA.

THE practitioner has so frequently occasion to have recourse to the skin, as an absorbing surface for various medicinal agents applied to it, that it becomes a matter of importance to establish on strict physiological grounds the causes which mostly influence the function of cutaneous absorption. To ascertain the introduction of a substance into the organism, the means usually employed are either chemical or physiological.

My present observations on absorption have been founded on physiological tests, principally obtained by observing the effect on the pupils from the absorption of certain medicines, such as atropine, aconite, &c.

Although the moist skin of the frog presents such extreme dissimilarity from that of most of the mammalia, yet on this animal we are able to reproduce one of the most striking effects observed in the latter stages of Asiatic cholera, *i.e.* the non-absorption of medicines introduced into the alimentary canal. By immersing the hinder extremities of this animal into a solution of cyanide of potassium, we can detect the presence of this salt after a few minutes on the tongue or any part of the mucous membrane of the mouth. But if the animal has

been previously etherised, so as to considerably diminish the heart's action, no absorption takes place, even after a prolonged immersion. Similar results are produced by woorara, or agents that reduce the heart's action. This is owing not so much to the absence of local absorption in the skin, as to the deficiency in the vascular action; for if we remove the skin of a part that has been immersed, we can detect on its inner surface the presence of the cyanide of potassium, which, however, from the deficient means of transport in the vessels around, has remained localised and inert in the system.

A like deficiency in the means of vascular conveyance is probably the cause of the inertness of medicinal agents in the stage of collapse of cholera, although the demonstration of this fact is deficient, as long as it is not proved by other means that the medicines have not entered into the circulation, as their want of action might possibly be owing to other causes.

The human skin, in common with that of most of the mammalia, presents great obstacles to the absorption of most of the substances placed in contact with it. The dry condensed varnish presented by the cuticle is the principal impediment. There is also another protective agency in the secretion of the sebaceous follicles to which M. Hebert first drew attention, which forms an oily surface, preventing the contact of aqueous liquids with the cuticle. These two causes are so efficient in preventing absorption, that many physiologists still deny the power of the skin to introduce into the system any medicinal agents dissolved in water.

Mons. Parisot has made numerous observations on children and adults subjected to a prolonged immersion, varying from one to two hours, in baths containing strong proportions of cyanide or iodide of potassium, or an infusion of belladonna leaves. He states that in all these cases he was unable to detect the presence of the substance in solution, and that with belladonna there was in no instance any dilatation of the pupils.

It is very difficult to reconcile these negative results with those of Westrumb, Homolle, and others, who have detected in the saliva and urine the presence of the above-mentioned salts after a prolonged immersion in a local bath containing them.

It is very obvious that, for the settlement of these important questions, we must appeal to the more delicate tests provided by the spectrometre, as in the observations of Dr. Bence Jones, who has shown what minute quantities of lithia may be detected in the various tissues of the body.

But if, instead of employing aqueous solutions, we place various alkaloids dissolved in chloroform in contact with the skin, we quickly obtain evident symptoms of the absorption of these agents, which may be carried to an extent sufficient to destroy life. When a mixture of equal parts of chloroform and tincture of aconite is maintained in contact with the human skin, it rapidly produces irritation and vascularisation, which, after augmenting during the first two or three minutes, subsides gradually, and the part becomes pale, and more or less insensible, with a local decrease of temperature. Still later the part becomes insensible to the prick of a needle, though it still retains an imperfect insensibility when pressed upon. In fact, the part is in a state of superficial paralysis, which does not extend to the deeper tissues. This state of anæsthesia will continue for several hours. The two principal agents producing it are chloroform and aconite. For if the former is used alone, a certain amount of insensibility may be obtained, but it is very imperfect and evanescent compared to that produced with the intervention of the tincture of aconite.

On the other hand, when the tincture of aconite is applied alone to the skin, it may be left undisturbed without producing either symptoms of irritation or absorption, such as are evidenced by hyperæsthesia in the first stage, or anæsthesia in the second stage of its action. In addition to the symptoms of anæsthesia, the mixture of aconite and chloroform is liable to produce vesication, and even a certain amount of ulceration of the cutis after having been maintained for a long time in contact with the skin. Besides these local symptoms of the absorption of aconite, there frequently exist others resulting from its general influence on the system, namely, slight nausea and a sense of depression.

On the lower animals the application of the same liquid is followed by similar local and general symptoms, which are more or less severe or fatal in proportion to the amount of surface

of the skin exposed to the solution. For example, when a young guinea-pig has one of its feet dipped into the solution for about a quarter of an hour, the result is invariably fatal, as is shown by the following case:—

"After five minutes' immersion, the part exposed became reddened and warm; this was quickly succeeded by complete insensibility of the integument. The foot was dipped in the liquid for ten minutes longer, then washed and dried. Soon after the lips became pale, the general temperature decreased, slight convulsions succeeded, accompanied by dyspnœa, frothing at the mouth, and efforts at vomiting. About three hours from the commencement of the experiment, all the above symptoms were much aggravated, and death speedily followed."

With a full-grown animal the results are the same, but it requires a much longer immersion to produce them. Similar results are obtained on the dog by the application of chloroform and aconite to the ear. Local insensibility is produced, followed by symptoms of poisoning, resembling those above-mentioned on the guinea-pig, which likewise terminate in the death of the animal.

As regards alcoholic solutions of aconite, the same negative evidences of their action are observed as on the human skin. But in order to study with greater precision the phenomena of absorption, either on the skin, or of any other part of the body, we must employ a means more precise and more capable of measurement than the above-mentioned symptoms. For this purpose I have been led to adopt in my investigations the albino rat. In this animal the pupils during daylight do not exceed one millimetre in diameter. They are less variable than those of most other animals, and, by the absence of black pigment in the iris and choroid, they are more easily measured. The return of the iris to its normal dimentions after its dilatation during the experiment allows us to follow the gradual elimination of the atropine from the system.[1]

[1] Besides this advantage, we may observe, by means of the microscope, the circulation of the blood in the vessels of the iris, and a part of the choroid, as in other transparent membranes. For this purpose the animal must be swathed up in a bandage, and tied on a strip of cork, as in my experiment on the frog's tongue. By means of a few turns of thread passed alternately in front and

The *modus operandi* consists in maintaining one of the feet of the animal in the required solution, while the pupil is examined from time to time to recognize the moment it begins to dilate. We at once observe by this means the extreme influence which the vehicle or dissolving body exercises on the activity of absorption ; for according as a chloroformic, alcoholic, or aqueous solution is employed, we may obtain dilatation of the pupil in two or three minutes, or perceive no effect after a prolonged immersion.

With a solution of atropine in chloroform of one per cent. of the alkaloid we generally obtain dilatation of the pupil in from two to five minutes. When once the dilatation has commenced, it rapidly progresses until it reaches its maximum. If after immersing the foot for a few seconds it is withdrawn, dilatation of the pupils is produced, although more slowly and less powerfully. The same is still the result if, after withdrawing the foot from the solution, it is carefully wiped and dried, showing how rapidly the atropine and chloroform penetrate into the substance of the skin.

With an alcoholic solution of the same strength as the above little or no effect is obtained after half an hour or an hour.

With a solution of atropine in water containing a few drops of acetic acid absorption is also very slow, generally producing no dilatation after thirty minutes. When withdrawn from the solution and exposed to the air, a slight dilatation of the pupil is obtained after a short time.

Extract of belladonna applied over the leg produced no dilatation at the end of an hour.

With a solution of strychnine and chloroform, dilatation of the pupils was observed at the end of three minutes. After five minutes slight convulsions about the larynx were observed, extending afterwards to the extremities, which were soon followed by tetanic convulsions, and finally by death.

An alcoholic solution of strychnia produced no symptoms whatever of the presence of strychnia after thirty-five minutes.

When the atropine is dissolved in a liquid consisting of equal

behind the eyeball, it is maintained sufficiently protruded and immovable for microscopic inspection. Under a power of two or three hundred diameters, the vessels in the iris, the choroid, and ciliary processes can be examined.

parts of chloroform and alcohol, a considerable dilatation is observed after three minutes.

With one part of chloroform and four parts of alcohol, atropine produced dilatation at the end of nine minutes. With atropine dissolved in essence of turpentine, little or no dilatation was produced while the extremity remained in the liquid, but if after ten minutes' immersion it is removed, dilatation of the pupils commences at once and soon attains its maximum.

It is almost superfluous to remark that with chloroform alone dilatation is not produced.

On repeating my experiments with chloroform and atropine, Mons. Parisot obtained upon himself the same results as those I had already observed upon the lower animals. He states that, on applying over the forehead alcoholic and chloroformic solutions of atropine, a compress of cotton imbibed with the chloroformic solution produced heat, redness, and commencing dilatation of the pupils, nearly equal on both sides.[1] With the alcoholic solution, no effect was obtained after two minutes' application, but after thirty minutes there was commencement of dilatation.

As far as regards myself, I have not been so successful as Mons. Parisot; and when we consider the small amount of surface exposed to the action of the topic, probably not $\frac{1}{500}$th part of the surface of the body, it would be remarkable if we could obtain the same results as those which I have described on animals, where the surface exposed is relatively so much greater, and equal to at least the tenth part of the surface of the animal. I can therefore only attribute the results of Mons. Parisot to some idiosyncrasy of an exceptional nature.[2]

The foot of an albino rat was immersed in a solution of equal parts of tincture of opium and chloroform. After twelve

[1] As the dilatation of the pupils in this case was unequal, there was probably some direct local action of the atropine on one of the eyes. The limit of the direct action of atropine on the iris is, however, very circumscribed on the albino rat. This may be seen by locally introducing atropine into or below the skin by means of a thread that has been steeped in a solution of atropine, and afterwards dried. Introduced close around the orbit, the atropine acts only upon the corresponding iris; but when the thread is inserted a few lines from the orbit, its influence becomes general, as is proved by the equal dilatation of the pupils.

[2] Vide *Comptes rendus de l'Académie des Sciences.* 1863.

minutes' immersion the limb was nearly insensible. After five minutes' longer immersion there were symptoms of somnolency, which continued to increase. The eyes were dull. The animal started at any sudden blow on the table, and moved a few steps; when near the edge fell over. Pupils were contracted. Two hours afterwards the animal had nearly recovered.

After fourteen minutes' immersion in a mixture of equal parts of alcohol and a chloroformic solution of morphia, the skin of the part immersed was insensible, as in the case above-mentioned. The pupils were generally much contracted, the eyes half-closed and very dull. At the end of half an hour the animal had nearly recovered.

A small quantity of acetate of morphia was introduced by means of a coarse thread soaked in a solution of morphia in the proportion of two grains of the alkaloid to one drachm of chloroform. After the thread had been dried, it was introduced beneath the skin to the extent of about the third of an inch. Twenty minutes afterwards the animal became drowsy and gradually was narcotised, presenting all the symptoms mentioned in the previous instance.

When in a state of narcotism from opiates the pupils in the albino rat are generally contracted, but in some cases they are much dilated, contracting considerably whenever the animal is aroused by some strong irritation. This discrepancy is probably owing to the pecular irritability of the retina and intolerance of light in this animal, for in other animals narcosis by opiates produces contraction of the pupil as on man.

With regard to the influence of alcohol when mixed with chloroform, we find that, instead of retarding, it rather accelerates absorption. Thus with atropine dissolved in equal parts of chloroform and alcohol, the dilatation of the pupil is manifestly more speedy than with chloroform alone, being generally two minutes in advance of the latter on full-grown animals. With a mixture of three parts of alcohol to one of chloroform, absorption appears to be as active as when the proportion of chloroform is much greater.

The addition of astringents to a solution of atropine and chloroform has no influence in retarding the absorption of the atropine.

Since the publication of my former researches on this subject, some observers have endeavoured to explain the accelerating influence of chloroform on cutaneous absorption by attributing it to the presence of the sebaceous matter. According to this theory, chloroform acted by dissolving the sebaceous matter, and in consequence quickly penetrated through the skin, carrying with it the substance in solution. It is impossible to accept this explanation; as alcohol likewise dissolves the sebaceous matter, yet alcoholic solutions remain unabsorbed after a prolonged contact with the skin. It was therefore requisite to examine the separate influence of chloroform and alcohol upon the skin after death in order to clear up this point.

For this purpose I employed a barometer tube of about one foot and a half in length, with one extremity blown out into a cup-shape form of about an inch and a half in diameter. This end was closed by a piece of the skin of the albino rat, with its outer surface placed uppermost, so as to be in contact with the liquid in the tube. One of these endosmometers was filled with chloroform and another with alcohol, plunged into water, and maintained in as similar conditions as possible with regard to external and internal hydrostatic pressure. The following results were obtained: the column of chloroform originally a foot in height in the tube had fallen—

9	Millimetres	after	24	hours'	immersion.
16	"	"	48	"	"
27.6	"	"	3	days'	"
39	"	"	4	"	"
43	"	"	8	"	"

This progressive *fall* of the column of chloroform has always been observed in my experiments.

It is scarcely necessary to say that precautions were taken to prevent evaporation of the upper surface of the column of chloroform.

In the endosmometer containing alcohol I observed, on the contrary, the constant *rise* of the column of alcohol in consequence of the endosmosis of the water.

After	24	hours'	immersion	the column rose	20 millimetres.
"	2	days'	"	"	30 "
"	4	"	"	"	24 "
		Total			74 millimetres.

The influence of chloroform in determining the direction of the current outwards was more evident when the endosmometer that had recently contained chloroform was filled with alcohol. In this instance the column of alcohol continued to fall for several days instead of rising—an effect manifestly owing to the saturation of the skin by the chloroform with which it had previously been in contact.

A limb was removed from an albino rat immediately after death, and a ligature carefully placed over the exposed surface, so as to prevent the entrance of the liquid. It was then placed in liquid chloroform. When weighed from time to time, after being well dried between folds of blotting-paper, the following were the results obtained:—

	Grains.
Weight of part before immersion. . . .	57·6
" " after 5 minutes' immersion	58·
" " " 5 hours' "	60·
" " " 14 " "	64·3
" " " 24 " "	66·
" " " 2 days' "	70·8
" " " 3 " "	73·6
" " " 5 " "	75·3
" " " 6 " "	76·3
" " " 11 " "	77·4
" " " 15 " "	78·2

In alcohol the same part of the body gave as follows:—

	Grains.
Weight of limb before immersion. . . .	63·2
" " after 6 hours' immersion	62·5
" " " 24 " "	62·5
" " " 2 days' "	60·
" " " 3 " "	59·5
" " " 8 " "	57·1
" " " 18 " "	58·8

Placed in a solution of equal parts of chloroform and alcohol, the results were as under:—

	Grains.
Initial weight	52·8
After 2 hours' immersion	59·
5 " "	60·3
11 " "	61·
1 days' "	61·5
2 " "	62·1
3 " "	61·2
4 " "	61·3
8 " "	61·3
14 " "	60·8

In this experiment we perceive that, after considerably augmenting in weight, it is diminished slightly after the second day's immersion. Although in experiments of this nature we are exposed to a certain amount of inaccuracy in consequence of the impossibility of drying the surface equally before each time of taking the weight, it is probable that this diminution in weight in the foregoing experiment is principally owing to the presence of the alcohol, which has drawn by endosmosis a certain amount of moisture contained in the tissues.

If, instead of placing the part in liquid chloroform, it is suspended in an atmosphere constantly saturated with chloroformic vapours, the following are the results obtained:—

	Grains.
Initial weight	52
After 38 hours	57·2
2 days	58·4
3 "	60·8
4 "	61·3
8 "	64·3
13 "	64·2

In an atmosphere saturated with alcohol, I found as follows:—

	Grains.
Initial weight	47·5
After 1 day	48·8
2 "	49
4 "	52
5 "	51
6 "	51·5
8 "	50
17 "	48
28 "	48·6

In order to ascertain the capacity of different tissues to imbibe chloroform, the following parts were placed in liquid chloroform immediately after the death of the animal.

	Skin.[1]	Hair.	Adipose Tissue.	Lung.	Spleen.	Testicles.	Thyroid Gland.	Heart.	Tongue.	Muscle of Thigh.	Liver.
Weight before immersion	16·7	6·6	4·9	12·8	11·2	14·8	11·3	14·3	8·6	19·2	12·2
Immersion for 3 hours.	20·2	10	9·6	13·6	11·8	14·6	11·8	14·2	7·6	19·7	10·5

[1] The skin had been deprived of the hair, muscular and adipose tissues.

The principal conclusions from the foregoing experiments are :

1. Chloroformic solutions applied to the skin of man and animals are quickly absorbed, and produce local and general results according to the substances employed.

2. Alcoholic and aqueous solutions are either not at all or very slowly absorbed.

3. Chloroform easily traverses the dead skin by diffusion.

4. Alcohol does not traverse the skin, but produces an endosmotic current with water.

5. Skin exposed to chloroform in a state of liquid or vapour absorbs a considerable quantity of it.

6. On traversing the septal skin of the endosmometer, chloroform carries with it a certain amount of any alkaloid dissolved in it.

7. These observations sufficiently explain the rapidity of cutaneous absorption during life, without our having recourse to any problematic influence of sebaceous matter on the surface of the skin.

ON THE USE OF IODIC ACID AND IODATE OF IRON,

BY JOHN W. OGLE, M.D.

Physician to St. George's Hospital.

THE reference made to the use by Dr. Cameron of ferric iodate as a therapeutical agent in the *Practitioner* for June (see p. 366) induces me to make mention of a trial which I gave, as far back as the year 1855, to iodic acid and the iodate of iron. Preparations of both were made for me by Mr. Fisher, of the firm of Fisher and Haselden, who was at that time a student in Dr. Noad's laboratory at St. George's Hospital. I was led to use the iodic acid by a desire to find a remedy similar in action to iodine, but having the advantage of being colourless when applied externally, and of not being deliquescent when used in the form of pill, &c. When considering the question of the utility of iodic acid, I naturally consulted Pereira's work, and found that he made reference to its use by Mr. Monks, then House-surgeon to the Poor-Law Schools at Norwood, who was stated to have administered it as a tonic, stimulant, and alterative (whatever that is) in hoarseness consequent on catarrh, in strumous cases, incipient phthisis, chronic inflammation, syphilis, &c., and who had written upon its internal use in the *Medical Times* for October 3, 1846. On referring to that journal, I found the history given of a case of aphonia of five months' duration successfully treated by inhalations of iodine, quinine and iodic acid being given cotemporaneously. I communicated also at the time with Mr. Monks, who wrote in reply (dating from the Commercial Road, Stepney, and saying that he had left Norwood), referring to his trials of the iodic acid, as follows:—

"About 1846 I was making some trials of the acids in the

exanthematous eruptive fevers; and comparing the results with an alkaline treatment in similar cases during the same epidemic period, I came to the conclusion that the acids had a decidedly favourable influence over these diseases (the alkalies an unfavourable effect). From this I was led on to try the iodic acid in some cases of debility and struma, and, I believe, with some advantages over the iodides. About this time circumstances arose which put off further investigation." In his observations upon the case already quoted from the *Medical Times*, Mr. Monks observed that "he frequently prescribed the disulphate of quinine, in combination with iodic acid, as an elegant tonic."

Referring to my notes of the time, I find that I frequently (at the St. George's and St. James's Dispensary) gave the iodic acid in doses varying from $1\frac{1}{2}$ grains upwards to 5 grains, and used it externally as a substitute for iodine. It was perfectly soluble in distilled water (22 or 24 grains to the ounce), but not perfectly so in proof spirit. It was supposed by Messrs. Fisher and Haselden that one grain was equal in effect to half a grain of iodine, and I generally applied it to the skin after friction, along with some stimulating liniment to ensure greater efficacy.

Considering that it was almost impossible to give the iodide of iron except in syrup, in addition to the iodic acid I had made for me a preparation of iodate of iron ($Fe_2 O_3 3IO_5$), a much more stable compound than the iodide; and I find from my notes that I gave this frequently in solution with water, also in pill, and in powder with some suitable vehicle, in cases of enlarged cervical and other glands, of indurated tonsils, of ophthalmia tarsi, &c., with decidedly beneficial effect. It was given in doses up to four grains each. I may here state, having respect to Mr. Monks' combination of iodine with quinine, that I am now using a syrup of bromide of iron, which Messrs. Bullock and Reynolds have prepared.

ON THE HYPODERMIC USE OF MORPHIA IN DISEASES OF THE HEART AND GREAT VESSELS.

BY T. CLIFFORD ALLBUTT, M.A., M.D. CANTAB., F.L.S.
Physician to the Leeds Infirmary, &c.

THE present paper is written in the hope that the mode of treatment I am about to propose is one of very high utility, and likely to bring comfort to many sufferers. So strongly, indeed, am I convinced of its importance, that I feel I ought not to delay the publication of my observations, although I now publish them under the pressure of many engagements. Any one of my readers, physician or not, who has watched at the bedsides of those who have died of heart disease or thoracic aneurisms will never lose the painful memory of their sufferings, or forget that of all modes of death these are, perhaps, the most terrible. Is it not rather a common than an uncommon fate to see men and women, otherwise healthy and with promise of life, placed at a fearful disadvantage by some injury in the heart or aorta, and who feel, with the undulled sensibilities of comparative health, how a mechanical fault at the very centre of the loom of life, and against which no bodily strength nor any device of medicine can prevail, is dragging them surely downwards, week by week and month by month? I think there is scarcely any extreme illness so distressing as the latter stages of these maladies, when a patient, often with a clear head and a good stomach, can only cling convulsively to a life he would willingly lose, and with gasping breath, a striving heart, and swollen limbs, hardly finds a moment's rest from torment. The inability of most of these patients to lie down, the banishment from their beds, and the dread of night, which come to other men as a friend, are perhaps the chief of their trials; and, as it would almost seem

by a wanton cruelty of nature we are forbidden to give to them that great consoler of the sufferings of others—opium. Will it not be a boon to them if there be yet some means by which the peace of an opiate can be given to relieve the iranxious watchings? I was myself led by such experience of another's suffering to seek earnestly for remedial means in heart and aortic diseases, and if I have been in any way successful, I am more than rewarded.

My farther experience of the *Prunus Virginiana*, and the gratifying testimony of others—of many strangers, moreover, who came to tell me of it at the British Medical Association—its increasing sale, too, at home and abroad, all convince me still of its utility. But in the latter stages of heart disease, when the wild cherry is either impotent or unequal to much help, I believe we have in the morphia syringe an invaluable ally.

From small and timid beginnings I have gone forward with this marvellous remedy, until I find myself now justified in using it fearlessly in any form and in any stage of heart and aortic disease. No matter how swollen the limbs, no matter how agitated the pulse, no matter how blue and how turgid the face and lips, I now never hesitate to inject morphia, and scarcely ever fail, even up to the time of the dying agonies, to give relief decided enough to earn the warm gratitude of the patient. At such times one feels the blessing of being a physician.

I believe I am right in supposing that the injection is not known in cases of this kind; if I am wrong, I must crave the reader's pardon. In my own consultations, however, I not only find it unknown to, but naturally dreaded by, my professional brethren. I never see it mentioned in the medical journals, and I have spoken of it to many leading physicians in London and elsewhere, who have confessed their own ignorance of the remedy, and have urged me to make it known. My friend and colleague, Mr. Teale, indeed, is quite familiar with this use of morphia, and I have the great advantage of his warm testimony in its favor—a testimony wholly unbiassed by me, for he had hit upon the remedy for heart disease almost or quite as soon as I began it, and he has never gone back from it.[1] I have found

[1] Mr. Teale tells me that he accidentally discovered the remedy when injecting for a painful ulcer a patient who also had heart disease.

also, that in every case in which another medical man has used the injection at my instance, so far from being alarmed by it, or dissatisfied, he has thenceforth regarded it as his best friend.

I use the hydrochlorate of morphia in doses varying from one-tenth to one-third of a grain; I seldom use half a grain, except in such a case as intense pain from angina or intrathoracic tumour. I always begin with one-eighth or one-sixth; and in ordinary cases I find a quarter of a grain the proper dose—in a case, say, of mitral regurgitation with pulmonary congestion in an otherwise healthy adult. The dose is best given in an evening, and should always be followed by perfect quiet in the room. This last is an important element in all cases of injection of morphia. The urine should be examined, and the drug withheld or given with caution if albumen be found. I think, however, there need be no great fear of it during albuminuria only secondary to the heart disease, unless there be reason to suppose that excessive renal congestion be present, and head symptoms at hand.

Once or twice I have injected morphia in small doses to mitigate suffering in patients with heart disease associated with granular kidney, and in whom no head symptoms had appeared. I have done it, however, in fear and trembling, and I think the risk is better avoided.

It is surprising how little the morphia has effected the head in the multitudes of cases in which I have tried it. The condition of the brain in heart disease is often, no doubt, anæmic, and some of the restlessness of the patient, and some of the heart disorder, may at times be due to cerebral anæmia. In such cases one might expect the morphia to câlm by bringing about the sleep, or rather the stupor, of cerebral congestion;—but this explanation is insufficient. On the contrary, in aortic disease with marked symptoms of encephalic anæmia I have seen less good result from the hypodermic use of morphia than in heart cases of other kinds. But in cases of mitral regurgitation, when the head is full of venous blood, and distress and stupor seem striving together, then I have found great benefit from the injection, for it stills the distress in the chest, and by staying the tumult of the heart it seems to allow the sinuses to empty themselves, and to allow of the establishment of a true soporific anæmia.

I think, moreover, that the unwonted blessing of peace brought by the drug so tranquilizes the system, that even those persons find solace and rest from its use, when labouring under heart disease, in whom, under other circumstances, morphia would rather annoy the medulla than tranquilize the cerebrum. I scarcely ever remember that morphia caused disturbance of the stomach or other inconvenience in the cases I am describing. As in cases of severe pain, so it seems that in cardiac disturbance the intolerable distress "carries off" the troublesome qualities of the drug. Its effects, again, are not merely comforting, but are curative so far as such cases are to be cured. An injection of morphia three or four times a week, by tranquilizing the heart and allowing the circulation to recover its freedom, sets free also the organs which are oppressed, and the system can once more find something like its balance.[1] Thus relieved, the patient may with incessant care enjoy some respite from his malady, and the occasional use of morphia may put off the day of its return. All this bears very closely on the difficult question, How is it that a man having a given lesion of the heart goes on sometimes for a year or two without an "attack" of general suffering, and after recoving from this may again go on for a longer or shorter while before the "attack" is repeated, the heart lesion remaining always the same? There seems to be a gradual accumulation of deficient work, which does not throw the patient over until it reaches a certain amount. Gradually and indirectly the morphia injection does much to restore balance of function; directly and immediately it seems to affect the chest almost alone. The face generally becomes less turgid and its expression calmer. The heart, which for days had been thumping out of all rhythm, or striving against an unequal weight of blood, becomes tranquil and rhythmical; and this, whether it be a direct result of the morphia or not, is the chief one, and that upon which the rest seems to hang. More haste, worse speed, is as true of heart work as of any other, and seems clear that the hurried labour of the overtasked heart is not compensatory, but is mere blindness and bewilderment. After injection the insufferable precordial dis-

[1] I should perhaps make a point of saying that in using the morphia I do not wish to overlook other remedies which still have their place.

tress ceases, and the heart gaining time and rhythm gains power. The effect upon the pulmonary circulation is very striking, the congestion and secretion of the lungs being lessened, to the unspeakable solace of the patient.[1] The quick, shallow, anxious "cardiac dyspnœa" gives way to a deeper, slower, and easier movement; the cough falls, not from want of sensibility, but from relief of oppression; the overweight of blood oozes slowly onwards, and the patient, who has been tossing in misery, feels the first tranquil sleep he has enjoyed for weeks. On awaking he is conscious of an ease he has not felt for long, and the good effects are often as well marked, and sometimes better marked, the second night than the first, so that in ordinary cases an injection every alternate night is sufficient. The injection has little or no direct effect upon the anasarca or the urinary secretion, but only gives occasion for their relief by other means. The venæ cavæ are no doubt unloaded, but the state of the kidneys and legs is too confirmed for immediate change.

As regards the class of cases in which the morphia is useful: it gives the most striking relief in angina with diseased coronary arteries, &c., in neuralgic distress from intrathoracic tumour, and in mitral regurgitation. It is very valuable also in small doses in so-called "irritable heart," whether this be due to weakness of the organ or instability of its nerves. It is less useful in disease of the aortic valves, and I think it is less valuable in mitral obstruction than in mitral regurgitation. In aortic disease however, where the heart is big and pumping, it gives much ease.

I need not detail any cases in which I have used the morphia, as they would not make my statements any the clearer; their farther confirmation must come from the profession; and I now leave the matter in the hands of my brethren, feeling assured that before long the injection of morphia will be a common remedy in cases of disease of the heart.

[1] It is the administration of "an opiate" during the clogged state of the lungs which will excite the most serious doubt. We cannot, however, reason in the least from morphia by the mouth to morphia by the skin; the remedies are quite distinct in their results. I have never dared to inject morphia in bronchitis, but shall not wonder if it is done before long.

THE ACTION OF SOME ALKALOIDS AND OF BROMIDE OF POTASSIUM ON THE HEART AND BLOOD-VESSELS OF THE FROG.

BY F. B. NUNNELEY, M.D.

A SHORT account is contained in the following paper of some experiments on strychnia, veratria, morphia, nicotine, conia, and bromide of potassium, made in a similar manner to others on atropine, digitaline, and aconitine, the results of which appeared in the *Proceedings of the Royal Society* for July 1869.

They were performed on frogs with the view of ascertaining the action of these substances on the heart and blood-vessels, and as preliminary to further investigation on warm-blooded animals.

In conducting them, the general action of a fatal dose, and the condition of the heart when death took place, were first observed; next, the heart was exposed *in situ*, and the changes in its mode of action caused by the poison were noted; in other frogs the heart was removed from the body and placed, whilst still beating, in solutions of the substances, and their effect on it observed. Lastly, the influence produced on the circulation in the web, both from the local application of the poison, and also from its injection under the skin, so as to affect the animal generally, were examined.

The study of the latter point requires some attention, as spontaneous contractions occur in the arteries when the frog is perfectly quiet, and also when it kicks; and often when cold water or an irritant is put on the web, they are accompanied by slackening of the current, which resumes its previous rapidity when the vessel dilates. They frequently take place again and again, and persist for a long time, so that care must be taken not to regard them as necessarily the consequence of an application which may have been made to the web. These contrac-

tions do not always depend on muscular movement, for they occur when the frog is completely paralysed by curare.

Strychnia.—In from three-quarters of a minute to two or three minutes after a small dose, tetanic spasms commence, especially on tapping the board on which the frog rests; the eye becomes insensitive in a few minutes more, but the spasms continue for many hours, or even for a day or two.

During the most violent convulsions the heart continues to beat regularly and with its ordinary strength, the rhythm of its movements being usually preserved throughout.

The frequency of the pulsations, in time, gradually diminishes, although they do not cease for many hours, and survive the occurrence of tetanus and the contractility of the lymphatic hearts; finally, the ventricle is left large, relaxed, and containing some blood, whilst the auricles are moderately full. Applied in dilute solution to the web, strychnia causes no change in the calibre of the small arteries; in a short time it is absorbed, and gives rise to tetanic spasms; even during these the size of the vessels is unaltered, and the current is only now and then temporarily stopped when they are prolonged and severe.

Immersion of the heart in a solution of strychnia does not produce any change in its appearance, nor does it cease to beat in a shorter time than if it had been placed in water.

Veratria.—After the injection, under the skin, of about one-sixteenth of a grain or less, the frog falls crouched up, and remains in any position in which it is placed; after a few minutes, reflex power and the sensitivity of the eye are lost; on opening the body the heart is found beating with moderate strength, but presents some peculiarities in its appearance. Sometimes, during systole, the blood is chased in a vermicular manner—often from base to apex—to one part of the ventricle, causing it to become bright red and projecting. The rhythm of the heart's action is usually disturbed, the ventricle remaining a long time in diastole, during which two contractions of the auricle occur, the second being quickly followed by the ventricular systole. The range of the heart's action diminishes, its contractions become feebler and lessen in frequency, without

primary acceleration, and at last cease, those of the ventricle before those of the auricles; the ventricle is then left rather relaxed, palish, and nearly empty, whilst the auricles are full of blood. The contractility of the blood heart lasts from about four to fourteen hours, surviving that of the lymphatic hearts by a considerable time.

No effect is produced on the size of the small arteries of the web, either by the local application of veratria, or by bringing the frog generally under its influence.

Immersion of the heart, removed from the body, in a solution of veratria, does not give rise to any peculiarity in its appearance.

Morphia.—Frogs are not affected by very small doses of morphia. A short time after the injection of about a quarter of a grain under the skin the animal becomes quieter, and the respiratory movements weaker; in one or more hour's time tetanus commences, and may be nearly as marked as in the case of strychnia; at the end of from twenty-four to forty hours the frog dies.

The heart is not visibly affected, but continues to beat regularly and with moderate strength; its rate of pulsation, at first unaltered, gradually lessens, and after many hours the organ finally ceases to beat, having survived reflex power, the occurrence of tetanus, and the contractility of the lymphatic hearts. The ventricle is left large, relaxed, and containing a little blood.

When morphia, in solution, is applied to the frog's web, or when the animal is tetanized by it, the calibre of the arteries does not undergo any alteration.

A heart immersed in its solution is not visibly affected in its mode of contraction.

The pupil of the frog's eye is not contracted by morphia.

Nicotine.—One or two minutes after the injection of $m\frac{1}{30}$th under the skin, the frog falls into a state of rigid spasms; shortly afterwards the eye becomes insensitive, and twitches occur in the limbs, except in that into which the injection has been made, and in which reflex power is abolished, although

it is not so in the animal generally for from one to two hours. Meantime the heart beats regularly, but with impaired force and diminished range of action.

The frequency of pulsation is little altered for some time; it then slowly lessens, the contractions become weaker and shallower, and in nineteen or more hours they cease, leaving the ventricle large, relaxed, and often containing much blood, whilst the auricles are distended with it.

Reflex acts, and the contractility of the lymphatic hearts, become extinct before the blood heart ceases to beat. Locally applied in aqueous solution, nicotine produces no change in the calibre of the small arteries, nor does it affect them when the animal is generally under its influence.

When the heart is removed and immersed in a solution of nicotine, the ventricle becomes angular in outline, sharp at the apex, and pale, and one or two partial constrictions are often seen around it. It ceases to beat in a varying length of time.

Conia acts on frogs with considerably less energy than nicotine, about $\mathfrak{m}\frac{1}{2}$ being required to kill the animal as promptly as happens with $\mathfrak{m}\frac{1}{40}$ of nicotine; with such a quantity rigid spasm does not occur, the frog becomes weaker and weaker, the limb into which the injection has been made is rapidly paralyzed, and the eye becomes insensitive in about ten minutes. On exposing the heart it is found beating regularly, though the ventricle is sometimes mottled red and white in diastole; the frequency of pulsation gradually lessens, until, at the end of some hours, the ventricle is left motionless, relaxed, soft, and containing some blood; previous to this the lymphatic hearts have ceased to beat and reflex power has become extinct.

Neither the local application of solution of conia, nor its injection under the skin, produces any effect on the calibre of the small arteries of the web.

Immersed in an aqueous solution of conia, the contour of the ventricle remains smooth and rounded.

Bromide of Potassium.—A dose of from one to four grains, injected under the skin, throws the frog at once into a state of

rigid spasm, in which the arms are put above the head, and the legs are drawn up; in about a minute this state ceases, and the frog crawls slowly about; in two or three minutes more the limbs are paralyzed, and soon after the eye becomes insensitive, reflex power is lost, and the frog becomes quite flaccid. On exposing the heart it is frequently found motionless, and contractions cannot be excited by irritating it; the ventricle is large and relaxed, and it and the auricles are distended with blood. This rapid abolition of the heart's functions is remarkable, and shows the bromide to be, in frogs at least. a powerful cardiac poison; its effects are as striking as those of digitaline, although in a different direction. With smaller doses—from the influence of which the frog often recovers—the heart's action becomes weaker, and the frequency of pulsation is quickly diminished, but the contractions continue for many hours. At first, at the end of systole, the blood is driven to one part of the ventricle, which becomes, with each contraction, a projecting red spot. No effect is produced on the arteries of the web, either by the local application of the bromide, or by its injection under the skin.

When the heart is immersed in a solution, the ventricle appears shrunken, and soon ceases to beat.

Two explanatory notes seem to be required. Firstly, no mention has been made of the action of these substances on the veins and capillaries. In the natural state the changes in their size are generally dependent on alternations in the arterial circulation, and in these experiments they were not independently affected. Secondly, although injection under the skin does not alter the size of the arteries, it notably affects the circulation in them. When the dose of any of these poisons is sufficiently large, the current of blood is seen to slacken, retrograde, and finally stop, leaving the artery nearly or quite empty whilst the heart still beats, but weakly, showing that although the heart continues to contract, its functions as the prime mover of the circulation are abolished—that although it acts as a *muscle* for a considerable period, it fails as a *heart* comparatively soon. Of the six substances examined, nicotine acted most powerfully in this way.

ON THE VALUE OF CARBOLIC ACID IN SKIN DISEASES.

BY EDGAR A. BROWNE.

Surgeon to the Liverpool Dispensary for Skin Diseases.

THERE is a natural tendency to exalt unduly any new remedy, especially if it be obviously powerful for good or ill, and the indications for its use appear to coincide with a preconceived theory, and to promise, *à priori*, some new road to success. The wish is father to the cure; and a result which, if attained by routine means, would seem no better than might be expected, becomes in the highest degree remarkable if compassed by a new method. An old remedy is said to do its work well; a new one (doing the same work not a whit better) is said to act like a charm.

To the psychologist this development of temporary enthusiasm may possibly be interesting. To the therapeutist, anxious to obtain data for the accurate estimate of a particular drug's power, it is thoroughly vexatious and confounding. It delays the progress of exact knowledge, and tends to foster a useless scepticism, not only of testimony, but of therapeutics.

In the case of carbolic acid the chorus has been unusually long and loud; but the praise, though profuse, has scarcely been discriminate. Theoretically it was fully justified, especially in skin diseases—with which alone I concern myself at present; the enormous reputation of the acid as an antiseptic (or destroyer of lowly organized forms of life) points to it as a parasiticide; its relations to tar suggest its employment in those chronic squamous and pruritic diseases in which tar and its allies have an indisputable value. When we add that by varying its strength we can produce all the effects intermediate between gentle stimulation and powerful cauterization, and that it mingles admirably with fat, oil, glycerine, or water, we should seem to have acquired a remedy of unrivalled range and utility.

And in the opinions of many practitioners these joyful anticipations appear to have been amply fulfilled. The good effects in favus and other tineæ have been especially chronicled as "magical;" and Rumour is scarcely full enough of tongues to say all the good things that should be said of carbolic acid.

But when we come to examine the grounds upon which these remarkable assertions are founded we find ourselves in the region of uncertainty. We do not find any true standard of success set up; consequently we cannot judge what has been effected. In order to do that with any exactitude we must have a criterion. It is not enough (to be esteemed successful) that a new drug should produce a *favourable* effect upon a disease or symptom—[that may and does satisfy the uneducated, hence the sale of nostrums, and the success of "pathies,"] we require a new remedy either to do work entirely new, or that it shall do old work better than it has hitherto been done. Short of this is not success.

In all the diseases of the skin for which carbolic acid has been recommended we have already remedies more or less efficacious and convenient. Does carbolic acid surpass these in efficacy or convenience?

To answer this question fairly we must make ourselves acquainted not only with the mode of working and value of carbolic acid, but of those drugs against which it is to be pitted. Poor soldiers well-officered may gain a victory over veterans foolishly commanded; but, managed with no greater skill than their opponents, they must lose the battle. Now it happens especially, but not exclusively, in skin diseases, that practitioners attain exceptionable skill in the use of this or that remedy, and are therefore prone to rate it higher than it deserves. On the other hand, a drug like carbolic acid, which has acquired a "sensational" reputation, is often reported upon by practitioners who have had but slight experiences in the use of routine remedies. In either case there is risk of grave error, which in this inquiry I have endeavoured to avoid.

In the treatment of tineæ carbolic acid comes into competition (amongst others) with two well-tried and effective remedies, corrosive sublimate and sulphurous acid. In attempting the comparison—a task which has extended over two years—I have followed a uniform plan of removing all crusts, scales, or acci-

dental deposits with a poultice or oil, washing the part affected with soft soap, and then applying the remedy for twenty-four hours continuously. In tinea circinata and tinea tonsurans very good results were attained, but nothing "magical," nothing beyond what may be usually seen in the routine treatment of these affections. It perhaps causes a little more irritation than an equally effectual strength of sulphurous acid. As regards convenience, carbolic acid stands at a disadvantage towards corrosive sublimate in the matter of smell, but requires less care in application than sulphurous acid—a point of greater importance in dispensary than in private practice. It may be added to the long list of drugs which can be used for the extirpation of these comparatively trivial diseases, but without attributing to it any sort of pre-eminence.

In favus[1] I have only had one opportunity of trying the acid. The case was recent, resulting from contagion. The patch was oval, about an inch and a half in its long diameter; cups thin but well-formed, perforated by hairs; sporules easily seen under the microscope. No hairs were pulled out, but the part affected, with an additional margin of healthy scalp, was kept close shaved, the crusts removed by soft soap, and a drachm of the crystallized acid in an ounce of glycerine thickened with spermaceti was kept closely applied under gutta-percha. Twice the application was suspended on account of irritation caused by the acid and soap; but the case was under treatment altogether eight weeks. At the end of this time hairs were growing nicely, and no sporules could be found. The mother was told to bring the child to me at once if a relapse occurred, but I have seen nothing of the case for ten months, and I hope a cure was effected. It can scarcely, however, be said that corrosive sublimate would not have acted equally well.

In tinea decalvans the acid seems to act injuriously on the young hairs, so I have ceased to use it.

In pityriasis versicolor the results have been decidedly unsatisfactory, but so uniform in a large number of cases as to leave

[1] Favus is so rare a disease that there is great difficulty in estimating the actual curative effect of any mode of treatment, and much uncertainty is imported into the inquiry by carelessness in diagnosis. During the past year I have had four cases submitted to me as favus—one was old-standing impetigo, one lepra (hardened and coloured yellow by some pomatum,) and two chronic eczema. My own case is given for what it is worth.

but little doubt in my mind that carbolic acid is an inefficient remedy compared with others. That it should act worse in this than other tineæ can be explained by the fact, that when the disease (as in tinea tonsurans) is situate in a hair-follicle and around a hair the acid is able to make its way along the shrivelled hair-shaft. But in pityriasis versicolor the disease is situated in the rete mucosum and protected by the outer layer of epidermis. This is hardened by carbolic acid and converted into a covering, which to a great extent prevents further penetration. Even when the hardened layer of scales is removed by an alkali or soft soap the result is not so good as with sulphurous acid similarly aided. It must also be borne in mind that liquor potassæ, or the soap diligently applied, will sometimes effect a good cure in this disease, and too much credit must not be awarded to the supplementary applications.

In eczema I am accustomed to add half a drachm or a drachm to an ounce of the zinc ointment, and consider it useful in hardening the newly-formed epidermis. In the later stages of the disease it may be used instead of the tarry preparations with moderate success. The facility with which its strength can be graduated to suit the varying susceptibility of the skin in various cases renders it a convenient application in a disease which varies as much in severity as eczema. But there is nothing peculiar in its actions, nor can any result be attained which cannot be equally effected by the tarry or mercurial stimulants in common use.

In sweating feet it acts remarkably well, stimulating the flabby relaxed skin and hardening the unduly porous epidermis. I recommend it to be used as a lotion, weak at first, but the strength gradually increased till it stings uncomfortably. It may then be disused, and in cases of moderate severity does not require to be repeated for two or three months.

In psoriasis it cannot be compared with tar. Out of a number of cases treated at the dispensary showing no indication for internal treatment, but all kept equally under the influence of arsenic, none have pleased me. In order to produce any noticeable effect with the acid it seemed necessary to use it sufficiently strong to cause considerable pain, and then, acting as a mild caustic, it is comparable to the acid nitrate of mercury so commonly employed.

As an antipruritic, carbolic acid belongs to the same class as corrosive sublimate and borax, but certainly does not surpass them. It is, however, a convenient addition to an evaporating lotion, and can generally be relied upon to relieve itching not dependent upon urticaria or true prurigo. In the former it seems utterly valueless; in the latter it often gives relief for a time. Like all the preparations derived from tar, it is remarkably uncertain in its action, and sometimes it notably exacerbates the irritation it is intended to allay. It is therefore to be used with some little caution. The officinal glycerinum, with the addition of half its bulk of spirit, is the preparation which has proved most successful in my hands. Compared with Hebra's useful mixture of tar and cod-liver oil, it is a cleanly and pleasant application, and is at all events worthy of a trial in the first instance. It is not generally so effectual.

In scabies and pediculi it is a good remedy, but as we have several devoid, or nearly so, of unpleasant odour, it is not worth considering.

As a caustic I should wish to confirm all that has been said in its praise. It is easily graduated in strength, and does not spread. Almost anything can be done with it that can be done with other causties, except, of course, where very great destruction of tissue is desired.

On the whole, carbolic acid may be considered a versatile jack-of-all-trades, doing many things fairly well, but in all (except as a caustic) inferior to some master remedy either in efficacy or convenience. It possesses some of the properties of nitric acid, corrosive sublimate, and tar, approaching in general qualities the two former more nearly than the latter. Its action in the tineæ and other diseases seems to be in no way specific, but to depend upon its power of coagulating albumen, stimulating the skin, and excluding the atmosphere. With trouble and care it may be made to do all that remedies possessing those qualities can be made to do—no more. It is in no sense of the words magical in its effects, nor can it be regarded as an important novelty in the therapeutics of the skin, as it can in some other departments of treatment.

ETHER AS A STIMULANT-SEDATIVE.

THE EXPERIENCE OF AN EMINENT JUDGE.

By the kindness of Sir James Alderson, President of the College of Physicians, we have been put in possession of the following facts. They were recently communicated to Sir James by Sir Frederick Pollock, late Chief Baron of the Exchequer, who has been good enough to desire us to publish them.

The long and arduous legal career of Sir Frederick Pollock is too well known to require more than a passing reference; it may be stated here, however, that he always combined with his proper legal studies and duties a large amount of literary, and especially of scientific, reading. A more active and continuous devotion of life to intellectual work has rarely been practised by any one. Favoured with an almost absolutely unbroken health, Sir F. Pollock has reached the great age of 86, yet still retains his mental energy and activity; while as regards physical status, with the exception of the inevitable decline of muscular energy, he at present scarcely betrays his age in any noticeable manner. About six years ago, however, he was led to adopt ether-inhalation by the occurrence of symptoms which, though not dangerous, were annoying, and had a chronic depressing tendency. Besides a certain amount of indefinable nervous malaise, he suffered specifically from gastric flatulence and painful spasm, occurring almost constantly during meals. His attention was drawn to the possibility of getting relief from these inconveniences by taking some stimulant-narcotic, and he remarks, in one of his notes, that many elderly persons, who have lived intellectually laborious lives,

have taken to the use of tobacco, or of opium, with a view to assuaging sleeplessness, and other nervous troubles which are very common at that period of life. Both tobacco and opium, however, disagree with Sir F. Pollock, or at least fail to produce the required effect. He therefore made experiments with the best rectified ether, which he inhaled from an ordinary bottle applied to one nostril; and it soon became apparent that a few whiffs, taken in this manner, were sufficient at once to quiet spasm and pain, and to induce a general tranquility of the nervous system. It is needless to say that only very small quantities of ether can enter the blood in such inhalations as are now described, since not only does much escape at once into the air, but of that which is actually breathed a large proportion is simply expired again without being absorbed; and the smallness of the dose physiologically appropriated is sufficiently proved by the fact that true anæsthetic phenomena are never produced. At most, when several strong whiffs have been taken continuously, especially if the temperature of the ether has been raised by holding the bottle a long time in the hand, a dizziness has been produced—just enough to amount to slight vertigo when the standing posture has been attempted; but on careful inquiry it does not appear that this degree of etherisation is necessary for the relief of the uncomfortable sensations on account of which the practice was originally adopted. So far from consciousness being disturbed or clouded by the use of the ordinary small doses of the vapour, it would seem that the intellect is both tranquilized and fortified by them. They fail to produce the least numbness of peripheral sensory nerves. Nor do they at all *compel* sleep; although, by removing nervous irritability, they evidently favour its occurrence when it would otherwise be difficult to procure.

The practice of ether inhalation, as above described, has been steadily continued by Sir F. Pollock up to the present time, and the general facts observable are the following:—Both his physical and mental health may be called magnificent, considering his advanced years. The pulse is regular and firm, of medium tension, and keeps very nearly to the standard of eighty; it does not appear to vary materially either during or after an inhalation. Not merely can gastric spasm and

flatulence be relieved with the same instantaneous certainty as at first, but the tendency to such affections has evidently and notably diminished. Sleep is obtained, at intervals, to the amount of, perhaps, eleven hours out of the twenty-four, including a regular mid-day siesta. As is common in advanced age, not much solid food is taken; but a moderate amount of alcoholic liquids (brandy and sherry) are consumed, in small doses. The appetite for solids is visibly diminished when any considerable amount of ether has been inhaled shortly before a meal. There is not the smallest impairment of muscular co-ordination proper; and in regard to this it may be mentioned that the handwriting is singularly vigorous and perfect. So free are the muscles from tremor that till quite lately Sir Frederick could balance a full wine-glass on the backs of his closed fingers and lift it to his lips without spilling; and even now the hand can be held out for a long time without a visible shake. At present the inhalations are very frequently taken, and a variable quantity of ether, amounting sometimes to several ounces in a day, is used: but of course it is impossible to calculate how much of this enters the blood. We may conclude this detail of the facts observed by stating that a few extra whiffs, of exceptional vigour, produce slight flushing of the face, and a feeling of fulness in the nasal mucuous membrane.

[Upon the facts of the above very interesting case we shall base a few remarks on the use of stimulants in the nervous malaise from which aged persons so frequently suffer. It is rather singular that more detailed and specific consideration has not been given, in medical treatises, to the management of the very troublesome neuroses of old age. Not to mention the severe and intractable neuralgias which occasionally make the last years of a long life miserable, there are minor nervous evils which more commonly beset the aged. The majority of very old people find it difficult or impossible to sleep continuously for any considerable length of time; and though, doubtless, this is of the less consequence because but little muscular exercise is taken, yet it is often distressing, and by its mental no less than its directly physical effects tends to unhinge the nervous system and to destroy the calm of life. Spas-

modic affections of the stomach and intestines also frequently cause great misery to old persons, and inflict further mischief by rendering the problem of their nutrition more difficult. It seems to us that for these troubles, which are so often spoken of as inevitable, the aged have a right to ask relief; and what is more important, they are generally pretty sure to attempt to get it. By coarse-fibred or uneducated persons, more especially, the relief may be sought in alcohol; and under the idea that one cannot have too much of a good thing the sufferer may contract habits of sottish excess. We have so recently proclaimed, however, our decided objection to the use of alcohol for the relief of the nervous miseries of adolescent and of middle life, that we may venture, without fear of being misunderstood, to say here that we have much less objection to the use of alcohol as a sedative in old age than during any portion of the time in which the disturbing influence of the *sexual* functions is felt by the organism; for it does not present a tithe of the seductions to excess in the former case which it does in the self-conscious condition of the organism which exists during sexual life. Still, one would prefer to be armed with a better weapon against the miseries of old age. Tobacco has the two great defects that women cannot use it, and that elderly men, if they have not smoked before, often fail to take to it comfortably at an advanced age. Opium is probably suitable to a considerable number of elderly persons, and an interesting point in medical morals is the extent to which its use, as a mere solace of life, should be deliberately permitted to the aged. For our own part we entertain a strong opinion that the commonplace morality which is usually talked now-a-days, on this subject, is both false and cruel. No one is more keenly alive than ourselves to the evils of narcotic indulgence (*i.e.* for the mere relief of trivial nervous discomfort) during the active period of life. But upon what principle it can possibly be wrong to soothe the declining days of those who have already fought the battle of life, we are at a loss to imagine. It is needless to remark that with many aged persons opium is found to disagree, disordering their digestion and impairing their nutrition; and this really is a fatal objection, where it exists. But why it should be wrong for a nervous and irritable old person, still less for one liable to stomach-cramps,

to take a daily allowance of laudanum, which has been found to make his life happy, we cannot conceive. The stock argument, of course, is that this and similar things muddle the intellect at a time when a calm retrospect of life ought to be taken, and the approach of death prepared for. But this involves an assumption of the very question at issue: for it may be with much reason maintained that the effects are the very opposite of this, and that by quieting nervous perturbation and worry we do in reality clarify the mind. And the fact is that elderly people have less difficulty than others in confining the dose of narcotic stimulants strictly or nearly strictly *within stimulant limits*, and hence one great objection to its use in earlier life does not apply here.

Still, there are social reasons which make it desirable to search for a better stimulant wherewith to soothe the nervous system of the aged than either alcohol, tobacco, or opium. We confess to a prejudice in favour of some agent which should be inhaled rather than one which should be drunk; but the number of substances which could be safely inhaled without the presence of a medical man is very limited. Neither chloroform, nor any of its subtitutes except ether, would be reasonably safe. The latter drug, however, inhaled in the manner described by Sir F. Pollock, is free from all danger to life, and can very easily be kept down to the production of its purely stimulant effects. We have not personally had much experience of the inhalation of these very small doses of ether; but we have very often experimented on ourselves with small quantities taken by the stomach, and can report that the effect of these upon the nervous system is not in the slightest degree depressing, but tranquillizes only by stimulating and thus steadying the nerves. There is no temptation to take ether by the mouth, however, as it is disgustingly nasty; and this is a real advantage. Nor is it likely to be taken in any large excess by the kind of inhalation above described, as its smell is only tolerable, and by no means attractive. Without, then, expressing any possitive opinion on the matter, it appears decidedly worth inquiring whether ether-inhalation might not be advantageously recommended to a large class of aged persons who would scarcely call themselves patients at all, but to whom "the grasshopper is a burden" from the irritable

state of their decaying nervous systems. It used to be a maxim of medicine, that the physician is as much bound to promote the euthanasia of the sick when they *must* die, as he is to save their lives if that be possible. And surely the phrase euthanasia may be reasonably enlarged so as to include not merely the management of the illness which actually cuts off an aged person at last, but the solace of months or years of a continuous decay which is the visible precursor of death.—Ed. Practitioner.]

Reviews.

Observations upon the Action of Ipecacuanha and its Alkaloid Emetia. By Dyce Duckworth, M.D. Edin. Reprinted from St. Bartholomew's Hosp. Reports, vol. v.

Dr. Duckworth has found much difficulty in procuring the emetic effect of drugs in young children, owing mostly, as he believes, to the failure of the medicinal substances to reach the mucous membrane of the stomach, from the presence of large quantities of mucus in that organ; he was therefore lead to search for a remedy that might be subcutaneously injected, and he selected emetia, the alkaloid of ipecacuanha, for experimentation on animals.

The results of Dr. Duckworth's researches prove that emetia, hypodermically injected, acts quite successfully as an emetic, but it is not yet certain whether its use can be practically adopted, as there is some doubt whether its solutions are not too irritant, locally. The pure alkaloid has seldom been medicinally employed. It is very costly, the price being 15*s.* a drachm. The most characteristic test is tincture of galls, which throws down emetia from its solutions in the form of a tannate.

Over and above the establishment of the emetic action of the alkaloid when given by the skin Dr. Duckworth's researches decide an important point, as to the effect of the drug upon the pulmonary circulation, upon which the experiments of Magendie were directly contradicted by the more recent ones of Pécholier. The latter authority asserted that poisonous doses caused an *anæmic* condition of the lungs; but Duckworth finds, on the contrary, that Magendie was right in the statement that *congestion* of the lungs is produced. Pécholier also said that the drug diminishes the frequency of respiration and circulation, but Duckworth found the respiratory movements increased, and cardiac action not retarded. This observation is of consequence, because it upsets a theoretical basis on which it has been proposed to explain the alleged styptic power of ipecacuanha in pulmonary hæmorrhage. Duckworth is inclined to think that emetia stimulates the vaso-inhibitory branches of the vagus, and from this results inaction of the motor branches, and a condition

of paralysis, or passive dilatation, of the blood-vessels presided over by the nerve. He suggests that this condition of the vagus explains the congestion, not only of the lungs, but of the gastro-intestinal mucous tract; and he promises further to investigate this subject in an additional paper, to which we shall look forward with much interest. As regards the production of vomiting, he cannot decide whether the nervous impression is made on the medulla oblongata or upon the gastric peripheral branches of the vagi. The results of one experiment, in which the vagi were divided before the administration of the emetia, seem to argue, as far as they go, that the characteristic effects of the drug are not produced when the continuity of those nerves is destroyed. A curious fact, not hitherto noted, is the frequent occurrence of *albuminuria* in emetia poisoning.

Electricity in its relations to Practical Medicine. By Dr. Moritz Meyer. Translated from the Third German Edition by William A. Hammond, M.D. &c. &c. New York: D. Appleton & Co. 8vo. Pp. 497.

The Americans are decidedly ahead of the English in one important practical matter. They rapidly produce translations of all the best French and German medical works; and the only wonder is that they have waited so long to reproduce the excellent treatise of Meyer, which is a standard work on the increasingly important subject of medical electricity. We strongly recommend the Sydenham Society to atone for its supiness in allowing itself to be forestalled in the translation of this important work, by immediately ordering the translation of the, perhaps, even more valuable and original treatise of Benedikt on the same subject. We have so recently reviewed the third German edition of Meyer, that we may confine ourselves to two or three remarks on the general character of the American reproduction of it. The external appearance of the book is charming; type, paper, and binding are all that could be desired. Moreover, the additions in the shape of foot-notes by Dr. Hammond, contain really valuable additions to our knowledge of the practical applications of electricity in medicine. We wish we could say as much for the literary excellence of the translation, but we really cannot praise the way in which it has been done. So very harsh and clumsy, nay, sometimes almost misleading, is the phraseology of the translator, that we can hardly avoid the suspicion that the bulk of the mere translating work must have been done for Dr. Hammond by some German assistant who was very imperfectly acquainted with our language. But notwithstanding these faults, the appearance of Meyer's work in an Enlish dress is a very welcome fact; and many will doubtless hasten to pos-

sess themselves of a treatise which is decidedly superior to anything as yet available to those who are not German scholars.

Selecta e Prescriptis. (*Selections from Physicians' Prescriptions.*) By Dr. Pereira. Fifteenth edition. London: John Churchill & Sons, 1869.

Although the change which has come over the practice of prescribing in later years is doubtless, on the whole, beneficial, we cannot help seeing that it has not a few disadvantages. It is becoming more and more the custom with medical men to write their prescriptions in English, and this practice has much to recommend it, as ensuring greater safety against mistakes on the part of druggists who may be ignorant of Latin. Yet the old fashion of Latin prescriptions had one great convenience, in making the prescription intelligible to pharmaciens in all European countries. And besides this, as long as doctors really took pains to prescribe in correct Latin, the effort of doing this was a species of mental culture not without good effects upon those who practised it. One thing, however, is thoroughly objectionable, namely, the bastard Latin, or jumble of bad Latin and English, which is too frequently employed by those who are neither bold enough to emancipate themselves altogether from the old fashions, nor sufficiently educated to write a classical prescription. It is such people who provoke the sneers of University dons, and the sarcasms of Mr. Bright. We are not prepared to say that Latin prescribing should be altogether given up. But if medical men will continue the custom, then, certainly, they ought to learn to carry it out decently; and to that end they can select no better model than the well-known handbook of Pereira. The present (we are glad to see it is the fifteenth) edition brings the work up to the level of the last Pharmacopœia, and in other ways adapts it to the wants of the day. It is a handy little book, and may be heartily recommended to students and practitioners.

A System of Surgery, Theoretical and Practical, in Treatises by various Authors. Edited by J. Holmes, M.A. Cantab., Surgeon and Lecturer on Surgery at St. George's Hospital, &c. Second Edition, in 5 volumes. Vol.: General Pathology. London: Longmans, 1869.

We are very glad to see the publication of a new edition of this valuable work commenced; and may fairly congratulate editor and publisher on the commercial as well as the literary success which is indicated by its appearance. The expansion of the work in its present form is apparently considerable, as it is now to reach five volumes instead of four as formerly. One very

great improvement effected, is the introduction of a certain number of illustrations, the want of which was a serious defect in the former edition. We need hardly say that in dealing with such matters as the microscopic characters of cancerous and other tumours, of the lesions of the spinal cord in tetanus, &c., no merely verbal description can possibly convey an adequate impression to the mind of the learner.

The contents of this volume are the now familiar treatises on Inflammation, by Mr. Simon; Abscess, by Mr. Holmes Coote; Sinus and Fistula, by Mr. Paget; Gangrene, by Mr. Coote; Ulcers, by Mr. Paget; Erysipelas, by Mr. De Morgan; Pyæmia, by Mr. Callender; Hectic and Traumatic Fever, by Mr. Croft; Tetanus, by Mr. Poland; Delirium Tremens, by Dr. A. W. Barclay; Scrofula, by Mr. Savory; Hysteria, by the same; Syphilis, by Mr. Henry Lee; Tumours and Cancer, by Mr. Paget and Mr. Charles Moore (the excellent microscopic part by Mr. H. Arnott); Contusions, by Mr. Paget; Wounds, by the same; Animal Poisons, by Mr. Poland; Wounds of Vessels, by Mr. Moore; Collapse, by Mr. Savory.

As before, the glory of this volume is the treatise on Inflammation by Mr. Simon; a paper which contains many things with which some of us would disagree, but which all must allow to display a lucidity of view, and a masterly grasp of the subject, which are, alas! very uncommon among medical writers. Long ago, in speaking incidentally of the great dreariness and want of interest which characterise medical treatises in general, Mr. Buckle expressly made an exception in favor of Mr. Simon's Lectures on Pathology; and if any one will take up the latter treatise, he will find that though written nineteen years ago, and based on information, as to facts, which further discoveries have necessarily much modified, the book is still alive with the vitality of genius; and contains numerous passages which possess that suggestiveness which in many cases is more valuable (certainly in the training of the better order of minds) than any quantity of cold and lifeless statements of so-called "facts." It is so, too, with the treatise on Inflammation, which carries us on with one continuous sweep from its beginning to its end. The secret of the interest we feel is undoubtedly this: that both in a scientific and (what is so much rarer) in a literary point of view the author has the art to present his subject as a whole which leaves on the mind the impression of clearness and freedom from the confusion of unnecessary detail, without any sacrifice of truth or completeness.

We say all this as distinctly and forcibly as we can, because, notwithstanding our admiration for the power and art displayed in Mr. Simon's great treatise, we cannot help a feeling of strong

dissent, not so much from any distinct proposition which he lays down, as from the general tone of the therapeutic portion of the article—a tone which, again, is only a further expression of the leading thought of the pathological portion. That leading thought is the strong sense with which Mr. Simon feels that inflammation is an action, a movement, an increased development of force; and by consequence that the main therapeutic object should be to cut off the fuel which feeds this fire. He certainly attaches more importance to the influence of depletive remedies than any physician, and than most surgeons, of the modern schools. It is true that he protests in energetic and convincing language against the routine use of depletory measures, and as regards bleeding, in particular, gives specific reasons for doubting the power of a general bleeding to materially affect a local inflammation. It is true that he also shows, with great fulness and excellence of illustration, the tendency of starvation and all other influences which are powerful depressors of tissue-life to be followed by inflammatory action. But we cannot help remarking that he shows a tendency, on the one hand to ignore the necessity for fresh and rapid supplies of nutriment, under which the organism of a patient with inflammation labours, and on the other to attribute more beneficial influence than we can credit to "defæcative" agents. With great diffidence, assuredly, but still from observations so frequently repeated that we have no right to doubt the evidence of our own eyes, we must differ entirely from Mr. Simon's opinion that patients affected with the foul tongue and anorexia of acute surgical fever may well and safely be left to that abstinence from anything but plain water which their own sensations suggest. We cannot think that any one surgeon's experience can teach a different lesson on this point from that inculcated by the experience of practitioners in general. And certainly, if there be one thing which we have personally observed in a manner that leaves no doubt in our minds, it is the danger of trusting to the indications given by the disordered sensations of a patient in the acute pyrexia of diffuse cellulitis, for instance, as to the necessity for frequent support by food.

We have said that the too pronounced tendency, as we venture to think it, towards restrictive, depletory, and defæcatory treatment which Mr. Simon's article exhibits, is organically consistent with the leading idea of his pathology. But in the new edition of his article he expressly reserves for the present the consideration of certain alleged discoveries (and notably of Cohnheim's famous researches on the migration of blood-corpuscles) which can scarcely fail to influence materially his general pathological standpoint. As the article stood in the first edition, the leading impression of inflammation which it left on the reader's mind was that of a

process characterized above all things by *rapidity of cell multiplication, and development of heat*, and curable, if at all, chiefly by direct interference with these processes. But if we are indeed to admit that the germ of the inflammatory process lies in the amœboid migration of blood-cells, and that the extent and kind of the consecutive inflammation is predetermined by the amount and kind of influences acting on those cells before their migration—and it looks very much as if we should come to this—then surely it must needs be admitted that much of the pathology and of the treatment indicated by Mr. Simon, and many other surgical writers on inflammation, will have to be set aside in favour of ideas which go more to the root of the matter. It would seem that the problems of the future will be concerned with the search for agents that can exert an influence on the life of the blood-cells (and perhaps on the vascular walls) so as to produce, to arrest, or to prevent, their amœboid migrations: and that with the discovery and classification of these agents we shall have completed the work of pathological and therapeutic inquiry about inflammation. Of course among these agents may possibly, and even very probably, be included some whose influence on the movement of the blood-corpuscles is exerted primarily through the nervous system. And we take leave to remark that in view of these probable changes of our ideas it is likely that the use of alcohol in pyrexia will come to have a very different significance to that accorded it by Mr. Simon. We are already beginning to know, and not as formerly merely suspect, that alcohol given in any case, or in any dose, so as to be *non-intoxicative*, acts as a *vascular tonic* in the only genuine sense of that phrase, *i. e.* that it raises arterial tension by its action on the peripheral portion of the circulatory apparatus. If to this it be added, as seems likely, that it directly checks amœboid movements of blood-corpuscles, then assuredly it takes the rank—in that class of cases to which it is applicable—not of a mere secondary and unimportant element of treatment, but of a remedy of the most intelligible and thoroughly scientific kind. All which is in addition to the fact, now completely proved, that alcohol is consumed within the blood and must take rank as a hydrocarbonaceous aliment which, within limits, is singularly easy of digestion. Alcohol is thus in a very different position, we submit, to that which Mr. Simon is inclined to assign it, viz. as a remedy whose excessive or untimely employment is a mere opposite equivalent of a practice so extravagantly unreasonable and unscientific as is excessive depletion.

The remaining articles in this volume show no great difference in their new dress, from their first appearance. As before, the work done by men like Mr. Paget, Mr. Campbell De Morgan, Mr. Charles Moore (especially on cancer), Mr. Henry Lee (on

syphilis), is first-rate; that of several others is good, but not so good as to deserve special mention. The articles by Mr. Holmes Coote must be singled out as showing their author's well-known ability, but being singularly badly and carelessly finished. And one or two articles—like Dr. A. W. Barclay's on delirum tremens—are worse than mediocre. On the whole the first volume of the new edition of this important System of Surgery well supports the reputation of the first edition, and is calculated to meet with a reception which will recompense the accomplished editor for the laborious work which he has undertaken and carried through so well.

Experiments upon the Physiological Action of Bromide of Potassium and Ammonium. (*As determined on Man and the Lower Animals.*) By ROBERT AMORY, M.D. Pamphlet. Boston: Clapp and Son, 1869.

THIS is the record of a very careful series of experiments which appear to establish conclusions that are a real addition to our knowledge of the action of the two bromides which are now so frequently employed in medicine. The following are the propositions in which Dr. Amory sums up his investigations:—"1. Bromide of potassium is easily aborbed by the mucous membrane wherever they are placed in contact. 2. This drug is *easily* absorbed by the skin, provided the water in which it is dissolved is below the temperature of 75° Fahr. If the temperature is above 96° Fahr., it is not absorbed. 3. The elimination is conducted by the skin and kidneys: as the saliva is a secretion its presence in this fluid is not a proof of its elimination. 4. In therapeutical doses bromide of potassium is not eliminated by the intestines or lungs. 5. Bromide of potassium passes out of the system without decomposition. As most of the decomposition of drugs takes place, according to Bernard, in the laboratory of the kidneys, Dr. Bill's theory in regard to the interchange between chlorine and bromine in the blood, is probably erroneous. If there is an interchange, it is in the kidneys; or outside of the body (in other words) that the transformation must occur. 6. The effects of the drug are produced by its direct action upon the blood-vessels, or the vaso-motor system which controls the contraction of these vessels, which explanation may account for all the physiological or therapeutical conditions brought about by the exhibition of this drug. 7. There is probably no different or opposing action in proportion to the dose administered, which cannot be said of all drugs. The larger the dose, the more intense and the longer the action upon the vaso-motor system. 8. Its action upon the general nervous system is secondary and dependent upon that of the vaso-motor nerves.

That it affects certain parts where there may be a determination of blood, is not contrary to the known laws of physiology. Lack of healthy resistance to disturbing influences allows the blood-vessels to be dilated, and, consequently, surcharged; the presence of this drug stirs up the opposing influence which contracts those vessels. This influence would be excited more powerfully upon the diseased portion of the system than upon the healthy portion. 9. Bromide of ammonium, in *almost* every respect, has the same action as bromide of potassium. This I judge from the results of more than twenty experiments conducted this last winter with a class at my laboratory." (Experiments appended.)

It may be noticed that Dr. Amory distinctly protests against the idea that bromide of potassium is a *specific* applicable to all cases of epilepsy. That variety of the disease which is dependent upon cerebral or spinal anæmia, he says, would be aggravated by it. And he insists that the action of the drug in diminishing the number and violence of fits is not permanently curative; the administration of the remedy cannot be discontinued for any length of time without a recurrence of the attacks. Apparently he believes that the immunity only continues during the period occupied by the gradual elimination of the salt from the body. On the other hand he warns us against the too frequent or long-continued use of the drug when there is no pressing necessity for interference; but we are sorry to see that he does not lay down any precise rules as to the doses to be used in various diseased conditions.

Clinical Notes on Diseases of the Larynx, investigated and treated with the assistance of the Laryngoscope. By WILLIAM MARCET, M D., F.R.S., Fellow of the College of Physicians; Assistant Physician to the Hospital for Consumption and Diseases of the Chest, Brompton, &c. &c. London: Longmans. Pp. 135.

THIS will be found a very useful little work. Without pretending to be a complete and elaborate treatise on its subject, it affords that particularly valuable kind of information which is given by careful and life-like pictures of disease; and it is also careful and minute on the subject of treatment. It is divided into three parts: the first describes the instruments required in laryngoscopy and laryngoscopic treatment, and discusses simple laryngitis; the second treats of nervous and hysterical aphonia; and the third describes laryngeal phthisis and its treatment.

The two points which have chiefly arrested our attention in reading this little work are the remarkable effects obtained in cases of nervous and mixed aphonia by a judicious employment of electricity (either alone or in combination with other means),

and the very careful description and discrimination of the early symptoms of "tubercular" laryngitis, and their appropriate treatment. On the latter subject, especially, we doubt if any such exact and painstaking descriptions exist, in the English language. We have one or two small bones to pick with the author, however. It is a little too bad of him to contribute by his example to the perpetuation of a confusion like that of calling the *induced* electric current "galvanism." It is hard enough to get the profession to recognise, at all, the important differences which exist between the nature and effects of the induced, and of the constant currents, respectively; but at least an essential step towards that object consists in establishing the custom of reserving the word "galvanism" strictly for the constant current. And we are rather disappointed to find that he does not appear to have made any experiments with the constant current, of which Tobold has spoken in very high terms, and has insisted on its superiority to the induced current as a remedy for paralyses and neuralgiæ of the larynx. Also, we are rather sorry for the way in which the author has used the word "tubercular." His description of the diseases of the larynx, which are more or less closely connected with consumption, are, as we have said, admirable; but he does not enter at all into the questions which are now so rife as to the distinction between caseous inflammation and true tuberculosis.

These, however, are but slight faults in a treatise which bears throughout the impress of true and enthusiastic work, and has the special educational value which belongs to such books, as contrasted with the work of the mere compiler. The author acknowledges with friendly candour all that has been done by Morell Mackenzie, Gibb, and Johnson: but he has succeeded in making a real addition to our knowledge of the important subject of which he treats.

A Text-book of Practical Medicine, with particular reference to Physiology and Pathological Anatomy. Translated from the German of Dr. Felix Niemeyer (Seventh Edition), by G. Humphreys, M.D., and Charles E. Hackley, M.D. Two vols. 8vo. New York: D. Appleton & Co. 1869.

Here is another instance of the enterprise which the Americans show in translating all the important works of German medical writers. We are free to confess, however, that the English have a good deal more excuse for not having produced a translation of Niemeyer's book than for neglecting to translate Meyer's or any German treatise on medical electricity. While on the latter subject almost nothing has been done in England, and almost

everything has been done in Germany, in the general field of practical medicine it is very different. We may fairly plead that there are English text-books of practical medicine which will bear favourable comparison with anything which has been produced in Europe.

The "Specielle Pathologie und Therapie" of Niemeyer is, nevertheless, a book that well deserved to be translated. Our readers have already seen our ideas of the German version (*Practitioner*, Sept. 1868), and it is only necessary to insist here, that Professor Niemeyer is one of the greatest of living physicians, and has moreover a strong bent towards the philosophic study of therapeutics, of which subject he is professor in the University of Tübingen. There is a great deal in these volumes with which we totally disagree; and we believe that most English physicians will assert with confidence that much of the antiphlogistic treatment recommended by Niemeyer is totally unnecessary: we would specially instance the remarks on pleurisy, which the author makes out to be a disease far more formidable than we think it in this country. But notwithstanding all this, the book is one that ought to be carefully read, and will convey many useful ideas, as the work of really great men always does. We may add that the translation of this book is almost as good as that of Meyer's treatise, above noticed, is bad.

Clinic of the Month.

Treatment of Ovarian Tumours by Tapping.—An able paper appears in the *Lancet* from the pen of Mr. Southam, of Manchester, in which he seeks to re-establish the value of simple tapping in the case of ovarian tumours as a means of keeping the growth of the tumour in check and the patient's general health unimpaired, and contrasts it with the high rate of mortality observed to occur after ovariotomy, even in the hands of the most skilful operators. Mr. Southam calls attention to the fact that tapping has sometimes arrested the disease for so long a time that it has almost been regarded in the light of a cure; and three such cases have fallen under his own personal observation, leading him to think that, in cases judiciously selected, the operation, if carefully performed, might be more frequently successful than is generally supposed. He thinks that one or two tappings are not likely to hinder the success of a subsequent operation of ovariotomy. On the contrary, one or two tappings, especially when the cyst has obtained a considerable size, are usually succeeded by a marked improvement in the patient's general health, and by a reduction of the original tumour, so that only a moderate incision through the abdominal parietes will be necessary for its abstraction; both of which conditions are favourable to the success of the major operation. He remarks that perfectly simple cases of ovariotomy sometimes, and indeed more frequently, prove fatal by peritonitis than cases of longer standing and of a more complicated character, in which death, if it occur, results from shock; the tendency of the peritoneum to inflammation being probably diminished by the friction against the cyst to which it has been exposed. From these considerations Mr. Southam has been accustomed to postpone the performance of ovariotomy, and in the earlier stages of the disease, whether the tumour be single or multilocular, to tap it once or twice when it has become inconveniently large; and since adopting this plan he has removed seven diseased ovaries with only one fatal result. Mr. Southam refers to the importance of tapping in order to obtain an accurate diagnosis, and also comments on the great improvement on the old plan of that which is now adopted—the patient being made to recline, the trochar being small, and the fluid removed by an elastic syphon which prevents the entrance of air,

no compressive bandage or manipulation being now employed. (See *Lancet*, Oct. 30, 1869.)

The Treatment of the Pedicle after Ovariotomy.—Mr. Maunder thinks that too much consideration is ordinarily paid to the pedicle of ovarian tumours, because various modes of treatment adopted by different surgeons are followed by equally felicitous results, showing it to be a matter of small importance which plan is adopted. The chief point, he thinks, is the prevention of hæmorrhage: and if a surgeon had sufficient courage he might resort to torsion, retaining or not the cut pedicle at the wound. The objection to torsion however is, that when the patient rallies from the depression caused by the operation, some vessel or vessels previously unobserved may bleed; and a similar objection applies to sealing the end of the pedicle with a hot iron and returning it into the abdomen—the eschar may become detached and fatal hæmorrhage ensue. The choice remaining therefore, is between securing the pedicle with a ligature and returning it, or retaining it at the surface of the wound with a clamp or ligature. The first method introduces a foreign body into the abdomen, and he therefore, with occasional exceptions, advocates the latter plan of treatment. (See *Medical Times and Gazette*, Oct. 9, 1869.)

Fungus of the Dura Mater.—Dr. Lawson Tait reports a case of this disease, which he considers to be of a cancerous nature, occurring in a foreigner. He believes, with Chelius, that it may spring from the dura mater, from the pericranium, or from both simultaneously. The present case was one of the latter variety. When first seen it had grown slowly, was soft, and pseudo-fluctuating, and occupied the right temporal fossa, being about one inch and a half in diameter. It was quite flat, and he suffered much pain when he attempted to rest upon it. The patient died about six weeks after, and the tumour was then found to be capsulated by the pericranium, and to have eroded but not perforated the skull; a similar but smaller tumour was growing from the corresponding surface of the dura mater. The substance of the tumour was of soft consistence, reddish yellow in colour, and composed of numerous regularly-shaped nucleated cells, with sparse interlacing of fibres. (Ibid.)

Solvent Treatment of Uric Acid Calculus.—The Rev. Vernon Harcourt furnishes an important communication, read before the Exeter meeting of the British Association, on the solvent treatment of uric acid calculus. In July 1868 he was informed he had a stone in the bladder of the probable diameter of one and a half inches, and he was recommended to aim at preventing its enlargement by such doses of citrate of potash as

might keep the urine in a state approaching neutrality, this recommendation being founded on the experiments of Dr. Roberts, showing the remarkable solvent power over uric acid that this salt possesses. He pursued this plan vigorously, but states he has been unable to produce any positive chemical evidence in favour of the solvent plan, chiefly on account of the uncertainty of the tests for uric acid. Yet he is persuaded that a solvent action was really going on; for an examination of the urine showed that there was a small amount of constant deposit, enveloped in mucus, bearing a close resemblance to the detritus left by the incomplete action of carbonate of potash on fragments of uric acid calcule. Having leisure, the requisite knowledge, and a good laboratory at his command, Mr. V. Harcourt made a series of investigations with a view of ascertaining the best mode of testing for uric acid, which has resulted in his devising the following plan, that may prove useful to some of our readers. A third or fourth part of the urine of twenty-four hours is, if alkaline, to be neutralized with hydrochloric acid, or if acid, with carbonate of potash. The urine is then to be evaporated to 1½ fluid ounces; and afterwards to be treated with 3 drachms of hydrochloric acid, combined with 1½ fluid ounces of alcohol; when clear the fluid is to be decanted, and the deposit washed first with alcohol, and, when that dissolves no more, with equal parts of acetic acid and water. The amount of potash in the urine does not detract from the accuracy of the determination. (See *Medical Times and Gazette*, Oct. 23, 1869.)

Suppression of Urine cured by external use of Digitalis.—Dr. Howard Reynolds gives the details of a case of suppression of urine, occurring in a woman, aged 47, in which only a wine-glassful of urine had been voided in the previous six days. Constant sickness was present, with slight drowsiness, and frequent pulse. The bladder was not distended. The patient thought she had often suffered from gravel, but had never been under treatment for it. Dr. Reynolds immediately commenced treatment, employing diaphoretics, warm applications, and the internal use of digitalis, in one-grain doses every four hours, up to the evening of the eighth day, without any satisfactory result, except that the pulse fell from 114 to 80 per minute. It was then determined to try the effect of the external application of digitalis. A large quantity of the fresh leaves was speadily collected, and these were made into a pulp by pouring boiling water over them. The first poultice was applied about 11 P.M., and was kept on for four hours, when it was removed and a fresh one supplied. Two hours afterwards a pint of clear pale urine was passed. A fresh poultice was again applied, and the patient was carefully watched. Plenty of urine continued

to be voided, and the patient was gradually restored to perfect health. (See *London Lancet*, Nov. 6, 1869.)

Charcoal Respirators for warming and purifying Inspired Air.—Dr. Marcet suggests the employment of an ori-nasal respirator, so constructed that the air for respiration passes freely through a thickness of nearly half an inch of tightly-packed fragments of charcoal; for he has found experimentally that such an instrument will not only warm the cold air breathed out of doors by from 8° to 11° Fahr., but will also impart additional heat to the air of a room comfortably warm, although considerably under the temperature of the body, and he regards it as questionable whether, in certain cases of excessive irritability of the throat or bronchi, the indoor use of the respirator may not be attended with advantage. Dr. Marcet states that his experience is now tolerably extensive as to the outdoor use of a respirator of this kind in the winter time, as a number of his patients at the Consumption Hospital are now wearing them in cold or foggy weather, or to rid air of smoke or other impurities, and they all agree as to the comfort and benefit they experience from their use. (Ibid.)

Treatment of Spinal Arthropathy.—Dr. Benj. Ball remarks that in diseases of the joints connected with progressive locomotor ataxy, the joint affected presents at first only slight symptoms, but hydrarthrosis is soon established, and the neighbouring tissues and bursæ become infiltrated with serum. At a later period permanent disorganization of the articulation, and destruction more or less complete of the articular surfaces, occur. In regard to its treatment, he considers it highly important to check its progress as rapidly as possible, and this may be best effected by absolute rest of the afflicted limb, by the use of revulsives, and especially of blisters, and at a later period he has found compresses exercise a favourable influence in bringing about resolution of the œdema, and hastening the absorption of the effused fluid. (See *Medical Times and Gazette*, Oct. 30, 1869.)

Mode of administering Creosote.—As cresosote is now frequently employed in the treatment of typhoid fever, and is exceedingly distasteful to some patients, it may be worth while to mention here a formula which in great measure covers its flavour, and is easily prepared:—

Creosote, 3 drops.
Essence of lemon, 2 drops.
Orange-flower water, 1 ounce.
Spring-water, 3 ounces.

A spoonful to be taken at frequent intervals throughout the day.

Extracts from British and Foreign Journals.

Treatment of Dysentery and Diarrhœa.—M. Gros recommends ergotine in these cases; he treated forty-four cases of dysentery with it, and had but one death, this being caused by dietetic irregularity on the part of the patient. Twenty-five of the cases were of a mild type. He gives six grains in mucilage, and frequently also gives clysters of twelve grains in starch. When it is not desirable to check the discharges too suddenly, as in acute diarrhœa, the enemata alone are used. He also speaks favourably of its effects in the chronic diarrhœa of adults and children: the latter take the remedy best in the form of *dragées*. The clysters are particularly useful as hæmostatics in the bloody dejections of dysentery. (*Edinburgh Medical Journal*, Nov.; and *Allg. Wiener Med. Zeitg.*)

Treatment of Ingrowing Toenail.—Dr. J. Quigley states that, having been a subject of this disease several years ago for a length of time in both great toes, the various methods adopted, such as "scraping down the nail on the affected side till it was thin and yielding, then introducing cotton under it," "removal of the corner," "keeping the sulcus between the nail and the flesh clear of epithelium," the use of nitrate of silver, astringent lotions, and a variety of other plans, not however including an operation under chloroform, all failed in effecting a cure. At length the following course was pursued:—A triangular notch was made midway in the free edge of the nail, extending to its body (the piece out of which should be in size about like the tooth of a tenon-saw); from the pointed margin of this notch a furrow was made, as near to the quick as possible, without penetrating it, through the middle of the root as far as the duplicature of skin; a piece of cork was then inserted under the nail, whose bulk was large enough to extend a few lines on either side of the notch, as well as to compactly fill, without uneasiness, the interspace between the skin and extremity. This completed the "operation."

In a few hours relief was marked, rapid improvement followed, and in a very short time it was quite evident the cure was complete. The elevating tendency of the piece of cork caused the corners to rise from the inflamed flesh, while, at the same time, the furrow through the centre allowed the nail to

flatten, and the burrowing edge of the ingrowing corner to eventually pass over and beyond the limited space of its former confinement. Thus, it is plain, all the indications of cure were fulfilled.

Dr. Quigley has since pursued no other plan of treatment in such cases, and, in every one, with unfailing success. (*Medical and Surgical Reporter*, Sept. 11, 1869.)

The Therapeutics of Dysentery.—Dr. Q. C. Smith, in a short paper on the subject, remarks that, after much reading, he finds great difference of opinion amongst "authorities," and he thus sums up that which he has himself found to be effectual. In the first place all complications, as far at least as time and circumstances will permit, should be removed, and then the following mixture may be administered:

M. Peach-leaf syrup, ʒ iv.
Syrup of ipecacuanha, ʒ ij.
Aromatic spirit of rhubarb, ʒ ij.
Acetate of morphia, gr. viij.—Ft. mist.

One tea-spoonful to be given every two hours through the day, the patient being allowed to rest undisturbed through the night. If this amount cause the patient to vomit, the dose must be diminished until the stomach will retain it. As to diet, mutton-broth may be given in the earlier stages, and as the stomach becomes stronger, mutton itself. The "peach-leaf syrup" referred to in the prescription is not officinal, but may thus be prepared: Fill a kettle with fresh, well-matured peach leaves, add enough water to cover the leaves, boil gently one hour, remove the leaves, strain the liquor, and while hot add sugar to make a syrup; to this when nearly cool add one ounce of peach brandy, and two grains of gum camphor to each quart of syrup. (Ibid. Aug. 14, 1869.)

Subcutaneous Injection of Morphia for Chronic Ulceration.—Dr. Mobley gives the details of a case in which an ulcer existed on the leg for a considerable period, resisting various plans of treatment. There was great swelling, accompanied by intense itching; the patient had no appetite, was much emaciated, and obtained little sleep; opiates produced no effect. Dr. Mobley ordered the application of a lotion composed of eight ounces of the expressed juice of the *Passiflora incarnata*, mixed with four drachms of cod-liver oil, three times daily, and at the same time he hypodermically injected one-third of a grain of sulphate of morphia to allay the pain. In six weeks, the same plan being pursued, the patient was well. Three other cases of ulceration were treated in a similar manner with equal success. (Ibid. Aug. 7, 1869.)

Treatment of Elephantiasis of the Nose.—M. Guibout states he has sucessfully treated a case of this disease, in which the nose of the patient was greatly swollen, bossy, of a deep port-wine colour, and felt by the patient to be so extremely disagreeable in appearance, as to compel him to seclude himself almost entirely from intercourse with the world, by the following means:—Every three or four days M. Guibout made from six to ten deep cuts with a double-edged lancet; the incisions were permitted to bleed for five to ten minutes, and then a pledget of charpie was placed over the organ, soaked in a concentrated solution of sal-ammoniac, pressure being maintained by means of rollers passing round the head, and the pledget kept constantly moist by the patient; at the same time a saline purgative was administered, with emollient drinks and diuretics. These frequent incisions freed the varicose vessels of the nose of some of their contents, and modified the vitality of the parts, which were powerfully affected also by the topical astringents subsequently applied. The numerous incisions produced an infinity of small cicatrices, so that a kind of artificial tissue of new formation became substituted by degrees for all the capillary venous and arterial varicosities of the diseased nose, till at length the organ resumed almost its normal and regular form, destitute of elevations, and of a colour scarcely more pronounced than that of the rest of the face. (*Lyon Médical*, October 24, 1869; and *Ann. de Derm. et de Syph.* No. II. 1869.)

Treatment of Sunstroke.—We notice, in the third edition of Dr. Flint's excellent "Practice of Medicine," that the author remarks that an unusally large number of cases of insolation occurred in July at the Bellevue Hospital. Of forty-three cases thirteen died. The treatment adopted was ice to the head, sponging the whole body with cold water, dry-cupping to the chest, sinapisms to the extremities, and stimulating enemas. In one set of cases bromide of potassium was given freely, the treatment being otherwise similar. In this set of cases the number of deaths was four, the total number being seventeen. In the cases in which this remedy was not employed, there were nine deaths in twenty-six cases. The experience is not sufficient to enable any positive conclusions to be drawn respecting the value of this remedy, but certainly justify its further trial. (*Flint's Practice of Medicine.*)

Therapeutic Value of the Prepartions of Iodine.—M. Bouchardat remarks, that amongst the preparations of iodine in ordinary use we must establish two categories, presenting remarkable differences in their physiological and therapeutic uses. In the first must be placed the compound preparations of iodine, which especially act by means of the free iodine, or

that which is easily set free. In this group may be placed tincture of iodine, iodated solutions, the iodides of iron and calcium. These preparations are not naturally eliminated from the body, and ought therefore to be given in very small doses; others, like the iodides of potassium and sodium, and especially the former, are normally eliminated, and may therefore be given in large doses. Another independent power possessed by the action of iodine compounds is their capability of carrying off in the excretions metallic substances which have been long retained in the body. When large doses of iodide of potassium are given, besides this eliminative action, the properties peculiarly characteristic of the salts of potassium become apparent, especially their disposition to be discharged by the kidneys and the salivary glands, from whence it follows that they incontestably possess a certain diuretic, and sialogogue influence. From this it would appear that very moderate doses of iodide of iron and of the iodide of calcium should be administered, and the effects of these should be carefully watched. The last-named salt merits, from several points of view, careful attention at the hands of practitioners. It is a less stable salt than the iodide of potassium, on which account no doubt it has been employed to much less extent; but this very instability renders it the more valuable as an iodine compound, providing at the same time it is administered in small doses, as from one to seven grains, its effects being observed with care. It acts beneficially in a double point of view, as an iodine compound and as a preparation of lime. It has been employed in phthisis, and may be regarded as very useful in certain forms of scrofula. It may be prescribed with advantage in glycosuric anæmia alternately with iron and quinine. (*Bulletin générale de Thérapeutique*, Oct. 15, 1869.)

Treatment of Alopecia.—M. Hardy recommends the following pomatum for cases of loss of hair, not dependent on syphilis or any parasitic affection:—

Suet	60	grammes.
Castor oil	25	"
Gallic acid	2	"

with a few drops of essence of vanilla. The presence of slight pityriasis does not in any way contra-indicate its employment. (*Journal de Pharmacie*, Oct. 1869.)

Treatment of Phagedenic Ulcer.—The *Journal de Pharmacie* states that the following ointment has been found advantageous in the treatment of this formidable disease:—

Extract of rhatany	4 parts.
Camphor	1 "
Extract of opium	2-4 "
Lard	30 "

Clinical Facts in reference to Chorea.—Professor Steiner maintains that chorea must be regarded as originating in spinal irritation, which may be occasioned by anæmia, by hyperæmia, by serous affusions and extravasations of blood, and lastly by neoplastic formations and organic changes occurring in the spinal cord itself, and in its membranous and osseous coverings. These conditions may be of traumatic origin, or may be consequences of acute rheumatism, or, finally, may result from anomalous processes of growth and development. The Professor had opportunities of making post-mortem examinations of three choreic subjects. The first resulted from a wound, and he found increase of growth in the connective tissues and an anæmic condition of the spinal cord, the spinal canal containing much serous fluid; in the second case he found a considerable degree of hyperæmia in the meninges and of the substance of the spinal cord, with serous effusion into the canal; and in the third case, which had been the subject of articular rheumatism, he found pericarditis and endocarditis, as well as inflammatory exudation into the canal of the spinal cord.

Anæmia of the spinal cord is the condition which the Professor believes to be most frequent, accompanied by certain anomalous processes of growth and development, since in fifty-two cases of the disease the ages of the sufferers were from six to eleven. According to the nature of the changes, the choreic symptoms are slight or severe, unilateral or bilateral, curable or incurable. Amongst the fifty-two cases forty were female, twelve male. When spinal irritation is already present, the attack of chorea may be induced by psychical causes, as fear, fright, &c., or by certain mechanical causes, as blows, falls, &c. The usual duration of the disease is from four to nine weeks, but relapses are frequent.

In regard to the treatment of the disease, Professor Steiner holds that chorea in the majority of cases cures itself, though there are other cases which resist every remedial means. Certain remedies, however, ameliorate and shorten the duration of the disease in the first class of cases. In view of the anæmia so frequently present, Professor Steiner orders iron, either alone or in combination with oxide of zinc, as in the following prescription:—Ferri carbon. saccharati, 2 parts; zinci oxyd. 1·25 part; sacch. alb. 8 parts: M., ft. pulv. t. d. sumen. The diet should be easily digestible and abundant. If after the employment of the iron for a fortnight no improvement occur,

the Professor resorts to the preparations of arsenic, by which the disease is often quickly and certainly cured, the general nutrition of the body and the appearance being at the same time much improved. He usually commences with one drop *per diem*, and increases the dose after three or four days to two, three, four, and five drops, and then, if improvement have resulted, withdraws the remedy in the same gradual way. Cold water, applied hydropathically, is sometimes very serviceable. If the disease owe its origin to rheumatism, the remedies appropriate to that diathesis must be administered. The subcutaneous injection of arsenicum, sulphur, chloroform, and morphia furnishes no satisfactory results. (*Der praktische Arzt.*, Nov. 9, 1869.)

Treatment of Tetanic Convulsions by Ice.—M. Leriche reports an interesting case in which a young lady, previously in good health, suddenly experienced pain and weakness in the calves of the legs. After walking a short distance she fell on a sofa with her legs extended and painful. She was lifted upon a bed, and after a short interval the muscles of the body, arms and neck became convulsed. The fingers were tightly clenched, and neither they nor the limbs could be extended. She could be lifted from the bed like a board. The intellect was unaffected, but there was a little impediment in the speech. Deglutition was impossible. The eyes were not convulsed. The skin was insensible. The pulse was normal. The respiration was slightly embarrassed. The abdominal muscles were relaxed. Opisthotonos was very distinctly marked. Dry frictions were first employed, followed by douches of cold water over the body. The patient stated that she felt benefit from these. Encouraged by this, portions of ice were placed on the neck and rubbed up and down the spine. In five minutes the chest and neck muscles were relaxed. Ice was now applied to various parts of the lower extremities without effect, but on being applied from above downwards, first to the lumbar and then to the sacral regions, speedy and permanent relaxation of the muscles of the lower limbs occurred, and the patient experienced no further bad symptoms.

M. Lerische remarks that this case differed from true tetanus in the absence of trismus, its commencing in the lower extremities, and by the absence of any previous accident or premonitory symptom. We may suppose that in this case there was a state of hyperæmia of the anterior columns of the spinal cord, which was removed by the application of the ice. It is remarkable, however, that there should have been anæsthesia of the skin of the parts convulsed. (*La Revue médicale*, Oct. 15, 1869.)

Carbolated Alcohol.—Dr. Williams extols a solution of carbolic acid in alcohol as an admirable dressing in certain surgical cases. The formula he recommends is as follows:—

℞ Acid carbolic, gr. v.
Alcohol dilut. U.S. P. f. ʒij.
Aquæ destillat. f. ʒj.—M. ft. lotio.

This, when applied to the surface of a recent wound, seems to promote speedy union. In cases of extensive cuts and amputations the wound should be permitted to dry and glaze as much as may be convenient before application. Dr. Williams thinks the efficiency of the remedy probably depends upon the coagulation of the free or excited albumen by the alcohol, thereby coating the surface and preventing further exudation and separation of the surfaces of the wound, and also upon the antiseptic property of the acid. (*Medical and Surgical Reporter*, No. 8, vol. xxi.)

Treatment of the Capillary Bronchitis of Children.—Dr. J. Da Costa recommends emetics for the capillary bronchitis of children. He gives

℞ Zinci sulphatis, gr. iij.
Pulv. ipecacuanhæ, gr. ij.—Ft. pulv.

To be taken every ten minutes till sickness occurs. In a child of three years of age one such powder may be given morning and evening, together with the following:—

℞ Sp. æther. nit. ♏x.
Ammon. carb., gr. j.
Syrupi senegæ, ♏xx.
Syrupi tolu, ♏x.
Aquæ, ♏xx.

One dose every third hour. Also, when the child is weak, twenty drops of brandy three times a day. Counter-irritation over the chest, by means of weak mustard plasters, may be employed. The most successful treatment of capillary bronchitis in children is, in Dr. Da Costa's opinion, that in which both stimulating expectorants and emetics form a part. Children cannot expectorate, and nothing gets rid of the mucus more quickly and effectually than emetics. The only objection to their use is that nearly all emetics are prostrating. Hence these agents must be given with judgment, and not repeated often enough to produce weakening results. (Ibid.)

On Transfusion of Blood.—Dr. Albanese reports that he has employed the transfusion of blood in seven cases, some of which were treated in Hospital della Concezione, and others in his own private practice. In all the cases defibrinated warm filtered human blood was employed, and the injection syringe

was introduced into the radial artery, and the fluid transmitted towards the periphery. In one case, the patient having lost the arm, the pedal artery of the left side was injected on the second occasion. The injected extremity below the point at which the syringe was introduced became in all instances cyanotic, cold, and swollen, but these appearances began to disappear in the course of half an hour, and soon disappeared entirely. In one case only ecchymoses formed in both hands; but large softened thromboses were found in many other places on section. Of the seven cases, the patient being *in extremis*, four recovered, of which in one the transfusion had been performed for anæmia from hæmorrhoids; in a second for bleeding after delivery; in a third for exhaustion from loss of blood consequent on a wound of the ulnar artery; and in the fourth for septicæmia. In the three fatal cases the cause of death was septicæmia. In the first three cases transfusion was only performed once. In the four cases suffering from septicæmia, it was performed twice. Great improvement followed the first injection in all cases, but the improvement consequent on the second operation was only transitory, and was followed by rapid decline terminating in death. The septicæmic patient that lived gradually recovered from this state. The quantity of blood injected amounted in the different instances to from three to six ounces. In most instances the anæmia of the patient was so great that scarcely a drop of blood was lost. Rigors or symptoms of oppression were only observed in one instance. These results appear to us to be encouraging, and certainly no woman should be allowed to die from hæmorrhage after delivery, without an effort being made to save her life by this means. (*Centralblatt*, Oct. 2.)

In connexion with the transfusion of blood we observe that a physician of St. Petersburg, M. Gesellus, rejecting the employment of defibrinated venous blood, proposes to obtain the supply needed from the cutaneous capillaries. With this object in view he has constructed a small apparatus with a glass sucker and scarifier. To this is attached a pneumatic pump and a glass tube to be used in the act of transfusion, terminating in a trochar, and capable of containing about five ounces of blood. This is surrounded by a caoutchouc bag containing water at 100° F. by which the coagulation of the blood may be prevented. The sucker is to be applied to the back of a healthy person, the lancets pressed into the skin as in cupping, and the blood as it flows collects in the lower part of the tube which is closed by a stopcock. The extremity of the tube is now plunged into the cephalic or median veins of the patient, and the blood allowed to enter his veins by the force of gravity.

In a late number of *Le Mouvement Médical* appears a mode

of destroying the fœtid odour arising from burns, which is certainly worthy of trial. It is well known that burns of the third or fourth degree, at the period when the eschar is separating, exhale an insupportable stench. For the purposes of disinfection carbolic acid may be employed; but when this happens not to be obtainable, its place may be taken by a solution of sulphate of iron. A good example of its beneficial action is exhibited in the case of a child recently under the care of M. Joel, of Lausanne, in whom the thighs, belly, buttocks, and back were extensively burnt. He was at once covered with carron oil, applied on waxed linen; on the fourth day abundant suppuration occurred, with febrile symptoms; an exceedingly foul odour was given off. To obviate this the child was immersed twice a day for fifteen or twenty minutes in a warm bath containing a considerable quantity of sulphate of iron. The advantages gained were immediate; suppuration diminished, and all odour vanished. The subsequent dressings were made with glycerine.

New Remedy for Ague.—M. F. Lorinser states that the agreeably smelling leaves of *Eucalyptus globulif.* may be employed with great success in the treatment of the marsh fevers of Spain and Portugal. The plant is a native of New Holland, and belongs to the family of the Myrtaceæ. M. Lorinser cultivated a few specimens, and prepared an alcoholic extract of the fresh young leaves (ʒ ij of the leaves to ʒ vj of alcohol). Two tea-spoonfuls of the tincture given either with or without a purge, before the attack, invariably shortened it and prevented a relapse. The possibility of cultivating it, and its pleasant flavour, render its introduction into practice not improbable. (*Centralblatt*, Oct. 2.)

Cold-Water Cure of Intermittent Epilepsy.—M. Pascal, the intelligent editor of *La Santé Publique*, a journal to which we have no analogue in England, and which ably discusses all questions of social and public medical importance, observes that the cold-water cure, or hydro-therapeutics, is steadily advancing, notwithstanding the opposition that has been offered to it by cupidity and ignorance. M. Monneret instituted the treatment of lead colic by cold water before he died, which has proved extraordinarily successful, and now M. Decaisne comes forward to propose the same means for intermittent epilepsy. He states that he has convinced himself of the fact that cold water materially modifies nervous attacks, and is an exceedingly efficacious antiperiodic. In twelve cases he has had four complete and permanent cures, five cases in which great improvement occurred, and three in which no good result was obtained. (*La Santé Publique*, No. 34.)

Notes and Queries.[1]

On the Action of Ipecacuanha in Vomiting, and its Rationale.—Mr. Richard Hughes, L.R.C.P. Edin., writes as follows:—"As the Editor of the *Practitioner* desires to accumulate evidence as to the effect of small doses of ipecacuanha in checking vomiting, I venture to submit the following cases:—

"I. Mrs. F——, aged 39, came under treatment August 19, 1864. Nine months ago, without assignable cause, she lost her appetite, and then began to vomit all her food soon after taking it. This has continued till the present time, and she has become very weak. The bowels also are relaxed, but the tongue is natural, and the other functions regularly performed. As she complained also of smarting of the eyes, I inquired about the wall-paper of her rooms, and hearing that it was green, desired her to bring me a piece of it, that I might examine it for arsenic. In the meantime I prescribed a dose, three times a day, of a tincture of ipecacuanha, so diluted that each dose should contain one-hundredth of a grain of the crude drug.

"*August* 26.—The vomiting has gradually diminished during the week, and has now quite ceased. She feels much stronger, so continues the medicine. (I had examined the wall-paper and found it non-arsenical.)

"*September* 2.—The report to-day is, 'No vomiting; gaining strength.'

"She took the ipecacuanha for a fortnight more, and then a non-medicinal placebo for three weeks, that I might keep her under observation. The symptoms all subsided, and she became quite well.

"II. Frederick G——, aged 54, consulted me August 1, 1865. He has vomited everything he has taken for three months past. The food causes pain during the short time it remains in the

[1] The Editor, being desirous of making this department a useful medium of communication between practitioners, will be glad to receive short notes on theoretical or practical points in therapeutics,—brief jottings on those numerous queries which suggest themselves from time to time to a medical man as he "goes his rounds," but which he has neither the time nor, in some cases, the opportunity of answering. The Editor does not pledge himself to reply to every question addressed to him, but he hopes to make the "department" the means of supplying the information required; and this he can only effect by the hearty assistance of his readers.

stomach; the tongue is coated brown, and is cleft. The bowels are regular; the urine thick.

"Ipecacuanha was ordered as in the previous case.

"*August* 8.—There has been no vomiting after the first two or three days. The feeling of nausea persists, and there is some pain after food. Continue medicine.

"*August* 15.—Continues to improve. Perget.

"*August* 22.—There is nothing wrong now but slight nausea and a little foulness of the tongue, for which I gave him a few doses of pulsatilla nigricans. He called on me on September 14, about his wife, and reported himself as continuing quite well.

"The form of vomiting illustrated by the above cases is that in which I have found ipecacuanha most serviceable. It is a moderate amount of irritation of the gastric mucous membrane, with disproportionate impatience of the presence of food in the stomach. But my experience quite coincides with that of Dr. Charles Phillips as to the value of the drug in the vomiting of pregnancy and of whooping-cough.

"I desire to be allowed to add a few words upon the *rationale* of this action of ipecacuanha, The Editor of this Journal 'calls attention to the fact that should it be proved, as seems likely, that small doses of ipecacuanha exert a tonic effect upon the sympathetic system generally, it will be the most effective blow yet given to the homœopathic theory of *similia similibus.*' It might be such a blow were this theory put forward as the *interpretation* of the curative action of ipecacuanha or of any other drug. But it makes no such claim. It professes only to be a guide to the selection of the remedy. It is a generalization of an empirical and phenomenal order—a rule of art rather than a law of science. As such, it is untouched by any speculations as to the *modus operandi* of remedies. It is simply an organon for the discovery of remedies of the class called 'specific.' Those may be and have been otherwise discovered. But those who are guided by *similia similibus* believe that by its means more 'specifics' have been found in the last half-century than have rewarded other modes of research for the previous five thousand years. Take this very instance of ipecacuanha. It is very likely that the opinion that it exerts a 'tonic action upon the sympathetic system generally' would have led to its use in vomiting, and would have indicated minute doses as the most suitable for the purpose? while, on the other hand, I am sure that both Dr. Ringer and Dr. Phillips would readily admit that they learnt this use of the drug from those who had themselves arrived at it by following the rule *similia similibus curentur*, and to whom its value in vomiting has been a familiar fact for the last fifty years and more.

"Is it not time, let me ask, that their example was more widely followed? The (so-called) homœopathic school comes before us with an array of alleged facts as to the efficacy of drugs given on the 'similar' principle. Is not the instance before us an encouragement to the testing of these allegations by experiment? It is purely a question of fact. All disputes as to the *rationale* of medicinal action, as to the range of the applicability of the method, as to the explanation of its efficacy, may well remain in abeyance. The matter of dose even is quite secondary. It is admitted that many similarly-acting drugs are curative, as in this instance of ipecacuanha, in doses not too small to offend ordinary susceptibilities. Homœopaths say that they began with such doses, but were led by experience to reduce them in many cases very much further. If they were right, experiment will lead others to the same result. If not, it is well that their mistake should be exposed, and separated from what may be their truth. In any case, it surely behooves the profession to winnow the wheat from the chaff in this field also, and to ascertain what is the fire, however little, which has caused this volume of smoke."

[The author of the above note misses the main drift of our objection to "*similia similibus*," and also to "Allopathy," which is, that there is no such thing in existence as a "similarity," or a "difference" between drugs and diseases, except in a thoroughly superficial and misleading sense. The idea is metaphysical, not scientific; and all history shows that such ideas form the worst possible basis for scientific inquiry. No better proof of this mischievous tendency could be shown, in our opinion, than its influence in keeping up the belief in "specific" remedies.—Ed. Practitioner.]

Dr. George Gent writes to us on the same subject as follows:—"In answer to your invitation in the last number of the *Practitioner*, for those who have had any experience in the action of ipecacuanha in vomiting to express the result of this treatment, I beg to forward you the following remarks:—For a considerable time past I have been in the habit of giving ipecacuanha in drop doses as a remedy for vomiting, and after considerable experience of this treatment, and very careful observations, I believe I am justified in making the following statements. 1. That ipecacuanha is extremely useful in very many cases of vomiting in pregnancy, but is certainly not an infallible remedy, though it will often remove this troublesome symptom when other remedies have been tried without avail. If ipecacuanha does good, I have always found it act at once. 2. That ipecacuanha is also extremely useful in checking the vomiting of children, arising from catarrh of the stomach. 3. Ipecacuanha

will very often control the vomiting of drunkards. 4. That in many cases of vomiting, where the cause cannot be discovered or explained, I have often found ipecacuanha to give immediate relief."

Alleged Evil Effects of Carbolic Acid.—Dr. W. S. Playfair writes to us as follows:—

"As I was the first to draw your attention in your periodical to the great value of the glycerines of carbolic acid and tannin in the treatment of uterine cancer, I trust you will allow me to make one or two observations on the cases published by my friend Mr. Edwards, in which death with symptoms of uræmia is attributed to the absorption of carbolic acid.

"The cases require serious consideration, and if it be true that the use of carbolic acid in this manner 'may involve such serious results as acute and fatal nephritis and uræmia,' as you observe in your editorial note, it will behove us to be most circumspect in imploying the remedy.

"This method of treatment is, however, of such unquestionable value, not only in destroying fœtor, but as I believe, in diminishing hæmorrhage, and in checking the progress of the disease, that I feel most unwilling to abandon it without the clearest evidence that the supposed evil consequences can fairly be traced to its use. This I venture to think, can scarcely be found in the narratives supplied by Mr. Edwards.

"The radical defect in them is the absence of post-mortem investigations as to the cause of death. Without this, how are we to know that the uræmia was not due to the extension of the malignant deposit to the bladder, and subsequent occlusion of the ureters? This is far from an uncommon occurrence in uterine cancer. It is specially mentioned as one of the terminations of the disease by Churchill; and illustrative cases, very similar in their history to Mr. Edwards', have been published by Dr. Bentley and others. Independently of this probable source of the occurrence, the first of the two cases is, I believe, entirely put out of court by the fact that the urine is stated to have been from the first 'highly albuminous,' and that for some time previous to death anasarca is noted to have existed.

"Surely, in this instance, it is a much more probable hypothesis that the uræmic symptoms arose from the same causes that gave rise to the albuminuria.

"It is, of course, only a negative argument to say that I have been in the habit of using the remedy pretty extensively in carcinoma without even witnessing anything suspicious. In one case I have used a stronger application than Mr. Edwards for more than a year and a half, with the effect of apparently throwing into abeyance a carcinoma that had been previously

been rapidly and steadily advancing. In many others I have used it for a longer or shorter time; but in none have I seen any troubles referrible to the kidneys.

"It is much more to the purpose to point out that in surgical practice, ever since Mr. Lister's method came into vogue, much stronger solutions of carbolic acid have been freely applied to all sorts of absorptive surfaces, wounds, stumps, compound fractures, and the like, and in no single instance, so far as I know, has any trouble arisen.

"Now the absorptive power of the vagina is very limited, and although it is probably different when the cervix is the seat of carcinoma, still it is not likely to take up more of the acid than a stump after amputation, or a severe lacerated wound.

"I plead, therefore, for a verdict of 'not proven,' and although I freely admit that the question is well worthy of careful attention, I do not think that we need abandon the use of so valuable an agent in the treatment of this painful disease, until some farther evidence as to its supposed evil consequences has been adduced."

[We did not intentionally represent Dr. Edwards' cases as *proving* anything. But they certainly do suggest a possible danger, which it is the more necessary to consider, since we *know* that carbolic acid—an eminently irritant substance—does pass out of the system by the kidneys.—Ed. Practitioner.]

Strychnia in Epilepsy.—Dr. E. H. Brandt, of Oporto, sends us the following "observation":—"Master D——, aged 11 years, had been suffering from repeated attacks of epilepsy (*petit mal*) for about three years, after an attack of sunstroke. The real nature of the disease was unknown, and he had undergone various treatments. The child was brought to me in July 1868, thin and pale, but otherwise strong, and very active. As worms exist in 75 per cent. of the children in this country, and as he used to rub his nose and grind his teeth, I gave him santonine, which had the desired effect of removing several lumbrici. The fits still continued. I then began treating him for his fits, and gave him bromide of potassium, in which I persevered for three months with hardly any effect, doses increasing from 0·50 centigrammes to one gramme three times a day. His memory was slightly affected. I then tried him with subcutaneous injections of Squire's bimeconate of morphia, dose quarter of a grain: this had a decided effect at first, but it soon became inert. He then took lactate of zinc with belladonna for two months: no effect on the fits; his general health improved, and he went to Lisbon for a change. He was there advised to take iron and quinine, which did not agree. On his return I gave the valerianate of atropine without the slightest improve-

ment. I was much perplexed and discourged, when I received your June, 1869, *Practitioner*, wherein I saw that strychnia had been given with success. I tried it at once, in doses of $\frac{1}{32}$ grain three times a day. The following day the fits were much worse, and more frequent; the second day less fits than he had had for three years; on the third day one fit only, which was the last until now. Three months have elapsed without a single fit; his general health is much improved, and his intelligence is not in the least affected. Could nine doses of $\frac{1}{32}$ grain produce such a miracle?"

Dr. S. A. Bindley, of Edgbaston, Birmingham, sent us the following, too late for notice in our November number:—"Will you kindly inform me, in your forthcoming number for November, if not too late, where I can find the researches of Pellikan and Kölliker, referred to in the review of recent works on therapeutics in the July, 1869, No. of the *British and Foreign*, p. 7; also those of Cunze on Arsenic; and whether a translation or summary in English has been given in any of our journals?

"Would it be troubling you too much to say also which is the *accepted* mode of action of saline aperients—the last one as given by Dr. Ringer in his recently published 'Handbook,' and adopted from Buchheim, or are we to accept the experiments on dogs of Dr. Headland as decisive on this question? According to the former, owing to their very low diffusive power, they are not absorbed in the stomach and bowels, but act as purgatives by retaining in the intestines the water in which they are dissolved, and also that which they meet with there, and that they do not act in any other way. But Dr. Headland shows, or attempts to show, that, if sufficient time be given, they are absorbed in the stomach and upper bowels, and are afterwards excreted from the blood into the lower bowels, and in *this* way act as purgatives."

[Kölliker's researches are to be found in Virchow's *Archiv*, 1856; *Transactions of Würzburg Med. Soc.*, vol. viii.; *Med. Central Zeit*, 1858. Pellikan's researches are in the *Prag. Viert. Jahrsch.* 1856. Cunze's researches on arsenic are in Henle and Pfeuffer's *Zeitsch.* 1860.

As to the action of saline aperients we cannot exactly say that either of the two theories mentioned is established by anything like universal opinion. Our own opinion leans strongly to the view of *absorption previous to action*.—Ed. Practioner.]

In answer to F. J. W. we may say that Dr. Ringer probably derived his statements about arsenic in cholera from Dr. Black, of Chesterfield (*Provincial Med. Assoc. Journ.*, 1854; *Lancet*, 1857). Whether he places any value on the well-known evidence of homœopathic writers to the same effect, we do not know.

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[1] Any of the foreign works mentioned below may be procured by application to Messrs. Kelly, Piet & Company, 174 Baltimore Street, Baltimore.

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THE PRACTITIONER.

THE PRACTITIONER:

A Monthly Journal

OF

THERAPEUTICS.

Edited by

FRANCIS E. ANSTIE, M.D., F.R.C.P.

Senior Assistant Physician to Westminster Hospital, Lecturer on Materia Medica in Westminster Hospital School; and Physician to the Belgrave Hospital for Children.

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THE PRACTITIONER.

JANUARY, 1870.

Original Communications.

THE MINERAL WATERS OF IRELAND.

BY JOHN MACPHERSON, M.D.

I HAVE been struck with the largeness of the contingent furnished by Ireland to many homes and foreign spas, and I have been so the more, because the virtues of many Irish wells were celebrated more than a century ago by Rutty, and by Ryan and Knox in more recent times. And not only were they mentioned in books; there was actually a very large resort to them, and they were visited by the gentry of the country. On this account I resolved this autumn to visit Ireland, and ascertain whether its springs had really come to be neglected, and if so, whether they deserved such neglect. I was the more inclined to do so, because the ordinary explanation, that like other wells they had got out of fashion, was not quite a sufficient one. We talk of fashion in such matters, but on the whole there is no class of remedial agents, the employment of which has been so steady and constant. While a combination of circumstances has in ordinary practice led to the use of particular remedies and modes of treatment, being at one time very prevalent, and during another almost abandoned, most mineral waters, especially thermal ones, have enjoyed a steady popularity. The wells known to the English three centuries ago are at this day their most popular places of resort. Aix-la-Chapelle, Ems, Wiesbaden, Baden-Baden, Baden in Switzerland, Pfeffers, Bath, and Buxton

have all maintained their reputation. And much of the same remark applies to cold mineral wells, though with more limitations.

Ireland abounds in sulphuretted hydrogen, in chalybeate, and in sulphuro-chalybeate wells. They are not generally strong, though they are pure of their kind. Indeed the absence of salts, even of earthy ones, in any quantity, is remarkable. And Ireland appears to possess no waters containing enough of common salt, or of Glauber or Epsom salts, to make them in the slightest degree aperient.

Perhaps a few preliminary observations on sulphur and chalybeate wells may save some repetition in the account of particular spas.

Sulphur Wells.—It is not a little singular, considering how popular sulphur wells have always been, that of the absolute action on the system of the small quantities of sulphuretted hydrogen they contain, scarcely anything is known. This is probably due to two causes: to the want of minute clinical observation of the cases of patients using such waters; and to the fact that it is quite the exception, unless in the Pyrenees, when sulphur springs do not contain, in addition to their sulphur, salts in sufficient quantity to have a distinct action on the system. Lisdunvarna in Ireland, Gillsland in Cumberland, and Llanwrtyd in Wales, appear to be almost the only springs in Great Britain of any importance which are pure enough to make them fit for a study of the effects of sulphur waters when drunk, and even Llanwrtyd contains about eight grains of salt in the pint. Authors appear to agree pretty generally in attributing a few effects to sulphur waters, such as the following, but the accounts of their physiological action are very imperfect. They have very generally considered them stimulating to the system. They all agree that they are diuretic, and that after a time under their use the motions become dark and offensive, that the person after a time exhales a peculiar odour, and that articles of silver worn by a patient are apt to get tarnished. Foreign authors say that their continued use now and then brings out a slight rash. I have recently observed, in an account of a Scotch sulphur well, the following statement, which is quite novel!

"We have frequently observed, during a course of the water,

the skin, especially of the hands, to become harder, and its cuticle to be shed in 'scurf.' Over the rest of the body the same process goes on, though rarely in an appreciable degree. On the face the action of the water is more that of a cosmetic. It has been observed by some who have taken the water extensively for some time, that on their underclothing being shaken over a fire, the impurities derived from the skin have burned with a blue colour, like particles of the flowers of sulphur—a somewhat extraordinary fact, which proves at once the strong impregnation of the water and its relation to the skin."

With respect to the therapeutic effects of sulphur waters, the universal belief at English and most foreign wells is that they are useful in chronic rheumatism and gout, in some forms of dyspepsia, and specific in all cutaneous complaints. Their use in liver affections is also advocated at home and abroad; but a favourite use of them abroad (generally heated), in case of bronchial and laryngeal irritation and in phthisis, is not usual in Great Britain. The Moffat authorities long ago said, that the use of their waters was contra-indicated in cases of cough or of threatened tuberculosis; and at Strathpeffer, "visitors who may come to the spa with symptoms of consumption are at once cautioned by the people of the place from drinking the waters."

It may be well for purposes of comparison to give the amount of sulphuretted hydrogen in some British wells, but many of the analyses are old and obviously not trustworthy.

Amount of sulphuretted hydrogen in cubic inches to the imperial pint:—

Lisdunvarna	·5
Moffat	·53
Strathpeffer	1·40
Llanwrtyd	·62
Llandrindod	·35
Gillsland	2·1
Harrogate	·53

Chalybeates.—Much need not be said here about the action of chalybeates; it is pretty well understood. Experiments would seem to show, that the average amount of iron in the human system is about 70 grains; that about 1 grain of metallic iron is taken in daily from our food, and the same amount excreted. So far then as the exhibition of iron is intended merely to restore

the normal proportion of iron to the blood, a very small quantity is sufficient, especially if presented to the system in a form in which it is readily taken up. Weak chalybeates may therefore be more important agents than one would have supposed, especially if they contain carbonic acid, which aids the assimilation of the iron; but unfortunately all British springs are deficient in their supply of this gas. The following table shows the amount of carbonate of iron in various springs in the pint. I may say that carbonate of iron may be considered to represent one-half the same quantity of metallic iron—*i. e.* that 1 grain of carbonate contains about half a grain of iron.

	Grains.
Tunbridge Wells	0·39
Lisdunvarna	0·4
Llandrindod, variously	0·77 or ·14
Ballynahinch	0·3
Harrogate (Kissingen)	0·373
" Tewit	1·16

I have purposely omitted the stronger chalybeates. Of the foregoing, Tunbridge Wells, Lisdunvarna, and the Tewit well, Harrogate, are specimens of pure chalybeates. The others contain very considerable amounts of common salt, or of sulphuretted hydrogen.

If the following remarks shall appear to be very general and deficient in detail, I must plead the difficulty of obtaining accurate information, where there are no resident medical officers. One is obliged to be satisfied with general impressions. All that can often be ascertained is, that certain patients have gone to certain wells and have benefitted by using them, or have failed to do so. How much is attributable to change of air and of mode of life, and how much to the use of the waters, is always difficult to determine, and the more so when the wonder-cure element is introduced—a subject, by the way, well worthy the consideration of the *Practitioner*. At every well, one is called on to believe the most miraculous cures of patients, who have been affected with diseases of years' standing, who have been treated by doctors at home and abroad, at spas foreign and domestic, and have never obtained relief till they came to the particular place which they have found to suit them. To credit such cures, requires the ample faith of those who believe that the famous Watford bone-

setter makes up for the deficient skill of our first London surgeons. It is the old story of "*vulgus vult decipi*"—the honest practitioner will not say "*et decipiatur*"—but assuredly, whether he says it or not, "*vulgus decipietur*" in such matters to the end of time.

Ballynahinch wells lie about two miles from the town of that name, which is readily reached by rail in an hour from Belfast. I found here two wells, the chief one a sulphur chalybeate, believed to contain 0·158 of oxide of iron in the 10,000 grains (the water must be very pure, for Dr. Kane found only 3·21 of solid contents in 10,000 grains), and another less used called the chalybeate, but believed not to contain any iron. The quality of the water of the principal well unfortunately varies, owing to soakage water at times reaching it from some neighbouring boggy ground. The first was not unpleasant to drink, after the sulphur taste was got over, and it does not contain much sulphuretted hydrogen; the second was tasteless. These two wells have pump-rooms built over them, and a patent pump, through which the water is supplied. There is also a small neglected bath-house, where baths of the sulphur-water can be had. The place is kept in very fair order; there are walks and rows of trees, and some slips of planting, also a maze. The country is hilly and agreeable, and there are pleasant walks in some neighbouring gentlemen's grounds. There are hills of moderate height in the neighbourhood; and some of the most picturesque in Ireland, the Slieve Donard range, with good sea-bathing at Newcastle, are about ten miles off. There are a small reading-room—in which in the forenoon I found a solitary lady—and a fair hotel; but visitors usually take lodgings in farmhouses, some thirty of which are in the neighbourhood. Altogether the place offers considerable inducements to those who are satisfied with country air and a very quiet mode of life, and who are likely to derive benefit from the use of a mild chalybeate. It is needless to say what are the indications for resort to such a place. Knox talks of Ballynahinch being the most crowded spa in Ireland; but the resort to it must have fallen off very considerably since the date of his book, although a good many people from the north of Ireland, and especially from Belfast, still visit it.

Half a pint of the sulphur or chief well twice daily is the

proper dose to commence with, the quantity to be gradually increased; it is not aperient. When I was there, I was assured that there was a gentleman taking sixteen tumblerfuls of it before breakfast. The Ballynahinch well must be considered a feeble sulphur chalybeate, unless fresh analysis should show its solid or gaseous constituents to be more abundant.

Swanlinbar is a small village in a picturesque enough country, eight or ten miles from Enniskillen. It has several wells in its neighbourhood, all impregnated with sulphuretted hydrogen. The chief well is about a mile out of the village on the other side of the stream. It has a shed over it, and is tolerably clean; but there is no sort of well establishment, and I had to borrow a glass from a neighbouring cottage. Although Swanlinbar has the reputation of being the strongest sulphur well in Ireland (there is no analysis of it; it is evidently very free from solid constituents), Knox merely represents it as moderately impregnated with sulphuretted hydrogen. There are at least three other sulphur wells in the immediate neighbourhood, some said to smell more powerfully than the chief well. These wells are no doubt pure sulphur springs, and produce the effects to be expected from such waters, as well now as they did in former days, when Swanlinbar was a fashionable place, and when Swift tortured his wit in a play upon its name. I was credibly informed that in the beginning of this century the place was so crowded, that people at times had to sleep in their carriages in default of accommodation. I cannot indeed see, although there are some houses of a better class, now in a state of decay, how any large number of people could have found shelter here. There is a respectable village inn, but no accommodation for strangers; but it is really not wanted, for I could here of no one drinking the water this year, except two ladies from Dublin. There are various objects of interest in the neighbourhood among the limestone mountains, which here, as in most countries, have been curiously worn by water; also the woods of Florence Court. In short, although Swanlinbar has the credit of being rather a damp place (and I saw it on a wet day), yet if the waters were more powerful, it might easily be made a place of some attraction to visitors; but I see no prospect of the revival of its former fame, for it is doubtful whether its springs are superior to many others of the same class.

Lisdunvarna, at this moment the only popular spa in Ireland, has been known for more than a century, but it is only within the last few years that it has become so well known. It is about twenty miles from Ennis, or any other point on the railway from Athenry to Limerick, and is usually reached by the public outside car from Ennis. It is situated in a bare open country, with low hills in the neighbourhood, not rising except in the distance to the height of mountains. They are all of limestone, and they yield a green pasturage; but in some places, not more than a couple of miles distant from the station, they are so bare, that there is scarcely room for a few blades of grass to grow. An old writer said that in this district "you will not find water enough to drown a man, or wood enough to hang him, or earth enough to bury him with." The air is counted wonderfully pure, and dry, considering that it is in the west of Ireland, and little more than three miles from the sea. A small stream runs through the place and has burrowed deeply among the limestone rocks, producing small ravines, which by the aid of planting might afford shaded walks and some variety to the visitors at the spa. As it is, everything is rough and unfinished, and one would never from its appearance dream that it is a place of considerable resort. Engineers have mapped out terraces and churches and assembly rooms, but these things are in the future, and I should say a very distant one, while funds are wanting, and the two landlords to whom the place and the wells belong, seem not inclined to come forward liberally.

The well most used at Lisdunvarna is the sulphur one near the bridge, close to the banks of the small stream. A small pump-room has been built over it by the proprietor, and the water is served out from an artificial pump. I went there after some heavy rain—bog-water had got into the well—and I saw only muddy water devoid of all smell of sulphur. I believe that this is by no means the first time that this accident has occurred. Those who were drinking sulphur water, had to repair down a muddy bank under the Protestant church, to two little excavations in the rock, like two hand-basins placed side by side, and within a foot or two of the swollen stream already mentioned. One of these little basins produces a strong sulphurous water; the other, a pure chalybeate, entirely free from all trace

of sulphur. It is a very pretty sight, and I was only sorry to see the place so neglected; no shed, no women to serve out the water; not room for a dozen people to stand between the well and the stream. Returning to the centre of the station, I visited the two original chalybeate springs. All three chalybeates are very pure, as appears from the accompanying analysis:—

PROFESSOR APJOHN'S ANALYSIS OF CHALYBEATES: GRAINS PER PINT.

	No. 1.	No. 2.	No. 3.
Silex	·14	·015	·16
Alumina	trans.	trans.	trans.
Carb. of Iron	·39	·28	·23
" Lime	1·2	·5	2·4
" Magnesia	·06	·04	·08
Sulphate of Lime	·76	·41	·62
" Magnésia	·33	·68	·61
" Potash	·06	·12	·05
Chloride of Sodium	·52	·48	·51
Organic Matter	·13	·07	·11
	3·59	2·69	4·81

One of these chalybeates is called the magnesian, just as improperly as I heard it said, that the soil of the place was full of copper. There were small coverings over these wells, but all around them was muddy. These were the chief wells; one other sulphur well has, I believe, been abandoned; and another, called the copperas well, is used only externally, and is said to be very weak.

We thus have at Lisdunvarna good sulphur springs of no great strength, and tolerably strong and pure chalybeates. Though there is no reason to believe that these wells are very remarkable in any way, yet it is evident that they afford elements which, if used judiciously, may, in conjunction with the pure bracing air of the west, be very useful as tonics to the system, particularly to such cases as can stand a little roughing, or to such hysterical cases and others as may be the better for roughing it. Chronic gout and rheumatism, dyspepsia, skin affections, and various forms of chlorosis and anæmia, are the classes of cases which are found to benefit most by the waters of Lisdunvarna. Many patients come to them year after year. One

gentleman who had seen a good deal of the world, and been in its various quarters, told me that he was there for the ninth time, and that he could not omit an annual visit without his health suffering. He considered a visit to Lisdunvarna an excellent prophylactic against gout, as many patients do a visit to Buxton.

Dr. Fawssett, who has brought all the latest information about Lisdunvarna together in his pleasantly written pamphlet, says that the quantity taken of the sulphur water by each patient is about two tumblerfuls thrice daily. The usual period of sojourn at the well is about three weeks, and the usage is to drink the sulphur springs for a fortnight, and then the chalybeates for a week; but there is no resident physician to prescribe; patients either follow the directions from their own doctors that they have started with, or follow the advice of other patients.

To those who enjoy moving about, there are various objects of interest at some distance, to be reached by car. The lofty black rocks of Moher, about 600 feet high, are a magnificent sight, even when the Atlantic is smooth; and the different points of view are commanded by plateaux ingeniously constructed on the edge of the cliff. The barren terraces of limestone at the Black Head or at the corkscrew descent to Ballyveay are unique, and different from anything of the kind to be seen in the British Isles; and last not least, a considerable variety of ferns and rare plants are to be found on the neighbouring hills, the collecting of which appeared to make an agreeable variety in the life of the visitors.

The accommodation is very indifferent. I was told that there were good lodging-houses. There is only one hotel, and it had little to recommend it, except the general *bonhomie* of its inmates. Priests were abundant, and inclined to be sociable. The food was good enough, but coarsely served. Although the press of visitors was over, I was put into a bedroom which was a sort of anteroom to two other bedrooms inside. My bed was an old sofa. I had two chairs with broken backs, and was not allowed a tumbler with my washing things. There is therefore need for improvement in every way, to make Lisdunvarna an agreeable place of residence; yet it was stated to me, that at one time during this season there were as many as 1,200 people congregated. Though therefore I do not think that Lisdunvarna will ever attract any visitors

except natives of the country, it is absolutely necessary, if it is to maintain its present repute, that all its arrangements should be improved; and it is highly desirable both that a competent medical officer on the spot should study the effects of the waters, and that we should have fresh and complete analyses of the springs.

I may next say a few words about some of the decayed wells, which I did not visit, but which I inquired about.

The sulphuretted wells of Lucan, near Dublin, which were once crowded, and have pump-rooms and public rooms, and are situated in a pretty country, appear to be quite forgotten, but without any good reason.

The Killymard sulphur well near Donegal, once used pretty extensively, is very little resorted to.

The Kilkenny chalybeate spas of Johnstown and Brownestown, once in favour and written up by Dr. Ryan, are quite forgotten. The hotel built at the former is now in ruins.

The chalybeates at Castle Connel, near Limerick, in beautiful scenery, are now scarcely known, though said to contain 0·39 of peroxide of iron in the pint. There are many sulphur wells of some local repute, a great many near Loch Earne. A strongly sulphuretted water was brought me from Krevenish; and there are many chalybeates of various strength in all corners of Ireland; some of them I saw near Cootehill.

Before concluding this survey of the Irish spas, I may be allowed to say a word or two about the only thermal source in that country, Mallow, although I have merely passed through it two or three times by rail. It lies on the line from Dublin to Cork, where it branches off to Killarney. It appears to me to be far the most desirable inland place of residence for invalids in Ireland. It has very nearly as mild a winter climate as that of Cork and Penzance, and from the middle of February to the end of April, owing to being sheltered from the east winds to which Cork is exposed, it is considered an excellent place for pulmonary cases. The country around is picturesque, and there are excellent houses. The pump-room and everything about the spring is kept in excellent order. Formerly the place was in great repute, and called the Irish Bath. Its spring is abundant, at a temperature varying from 66° to 72°. It is singularly pure water—the mineral contents very small—but there is a great abundance of

nitrogen gas, probably as much as is present in the waters of Buxton. While the nature of the action of nitrogen on the system is quite unknown, it is curious to find, that the warm nitrogen waters have been considered elsewhere particularly useful in phthisis, and, like other indifferent warm waters, beneficial in some forms of dyspepsia. Such waters are commonly used abroad, as at Lippe and Paderborn, for the purposes of inhalation. Mallow has also some chalybeate springs in its neighbourhood.

Holy wells are so numerous in Ireland that I had the curiosity to visit two of them; both of them were quite tasteless, so that their virtue lay in their sanctity. At the first, near Liscanor, there were the usual stations of Catholic places of pilgrimage. I only found one boy, who had been drinking and performing his devotions for a fortnight; he was suffering from chronic ophthalmia tarsi, and was rather desponding, and could not say that he was much better, and no wonder in so obstinate a complaint. The other well was at Ardmore, in the south of Ireland. You drink the water and wish for your cure, and must walk three times round the ruins of an adjacent chapel, but with, not against, the sun. I was interested in a very obstinate case of deep-seated inflammation of the eyes, which had resisted various modes of treatment. I wished for the improvement of the case, and sure enough, within a week, when I had occasion to see the patient, there was marked improvement, which continued. If this was not *propter hoc*, at all events it was *post hoc*, and is not a bad illustration of the sources of popular belief in such cures. Many English springs, called eye-wells, have probably no higher claims to be considered efficacious.

The general result of my inquiry is, that Ireland has fair chalybeates and sulphur wells; but none—unless more complete chemical analysis shall detect them—of any great importance, or likely even in happier days to attract the notice of strangers.

No better proof of the deficiency in mineral constituents of the Irish spas can be found than in the recommendations of the first and last writers on the Irish spas that I have come across.

Dr. Dellon in 1684, in his notice of the feeble chalybeate of Chapelyzod, near Dublin, proposes a way of improving by art

weakly impregnated mineral waters; and Dr. Fawssett, in his recent account of Lisdunvarna, suggests the addition of aperient powders to make its waters laxative, and of carbonic acid to make them palatable.

On the whole, bathing forms a very small portion of the treatment at any of the Irish spas. I regret on this account that I did not hear till just before leaving Ireland, and when I was unable to visit it, of what is called Bathing Bay, in Lough Neagh. It is in the south-western angle of that large inland sea. Four or five sulphur springs run into it there, and probably impregnate a small angle of the loch. On this account the natives have much faith in its curative effects, especially in scrofula. They used to bathe in it, just as the natives of Bengal bathe in the sulphur tanks of Buklesir; the heat of the water there, however, forming an additional attraction. A very remarkable fact in the history of his Lough Neagh water is that, towards the close of the last century, such faith in its power over scrofula had the Rev. Dr. Lill, that he bequeathed a sum of money for the maintenance of a hospital at Washing Bay. But the wishes of the testator were neglected, the value of the property he left became deteriorated, and eventually the funds were diverted to the nearest county hospital, that of Armagh. It was long thought that the waters of Lough Neagh, like those of Knaresborough, once a popular spa, possessed petrifying properties, but the petrified wood which is still found in it is probably fossil.

Besides bathing in Lough Neagh, the Irish have also bathed themselves and their horses in the bituminous mud of Lough Leigh, or Loughinlea, a small loch in the hills between Kingscourt and Baillieborough, in county Cavan, where also are chalybeate springs. They seem also to smear the affected parts with the mud, and we have thus a distinct specimen of *lutation,* and the first step towards the mud and peat baths now so popular on the continent of Europe, and for the employment of which Ireland supplies such ample means, if any encouragement were offered.

Another process well known in other parts of the world, Dr. Stokes, of Dublin, has been good enough to inform me, was at one time extensively practiced at Tramore, near Waterford,—

that of *arenation;* that is, of covering the body of the patient with the sand of the sea-shore.

But if Ireland is poor in mineral waters, it can vie with any country in its sea-bathing places all round its coasts. Most of them I have enumerated elsewhere,[1] and shall only add two or three which I then overlooked: Miltown Malbay, not far from Lisdunvarna, and the two great southern watering-places near Waterford —Dunmore, the resort chiefly of the wealthier, Tramore of the poorer classes. The latter is crowded every season. Dr. Stokes informs me that among the popular cures in Ireland was that called "the sick boat." At Tramore every morning a huge flat-bottomed boat received a cargo of patients at the charge of a halfpenny each. It was generally crowded, and remained at anchor in the swell of the sea for ten or twelve hours, so that the full benefits of the sea-sickness were procured. This, though it may have been entitled to be noticed here as a seaside cure, has no right to be mentioned among mineral water cures, for I am not aware that any such waters, however nauseous, have been used as emetics. The Irish bathing-places are very fairly supplied with hot and cold baths, also with boxes for dressing in; regular machines drawn up and down are not common. The chief defect in such places is bad hotels; but in some places, as Port Rush, Newcastle, Kilkee, Miltown Malbay, and Tramore, they are good.

However, improvements are wanted in most places. I had occasion during the same week to sit down at an Irish *table d'hôte*, where German waiters and artificial flowers scarcely made up for starved fowls and stringy mutton; and at a commercial hotel in Buxton, where the solid good feeding, served up with no show, was almost oppressive. And the contrast among the guests was equally strong. In person the Irish guests were much less bulky than the English ones. Surely the burly Englishmen with their buxom dames, who made such a serious business of their eating, had not come to Buxton to seek relief for overworked stomachs or livers?

1 "Baths and Wells of Europe," 1869.

ON THE EMPLOYMENT OF DIGITALIS IN DISEASES OF THE HEART.

BY SYDNEY RINGER, M.D.

The beneficial effects of digitalis on some complaints of the heart are most striking, but still much uncertainty as to the precise diseases which are amenable to this remedy appears to be generally experienced. It is with the hope of removing in some degree this uncertainty that the following paper is written.

Its good effects are most apparent in cardiac dropsy; but it is not suited to all forms of this disease, for the heart complaint, on which dropsy may depend, is not always of the same kind. Thus the dropsy may be due to dilatation of the ventricles, or to some disease where this is not present. Moreover the dilatation may be limited to the right, or may be most marked in the left ventricle. If on the right side, it may be owing to obstruction to the free passage of the blood, as in the lungs from emphysema and bronchitis, which obstruction causes the right ventricle to become engorged, and so distended that its valves are made incompetent, and tricuspid regurgitation with its consequent, dropsy, results. Or the dilatation may be mainly or entirely limited to the ventricle of the left side, and be due to aortic or mitral disease, or to both. Further, there by no means uncommonly occurs extreme dilatation, with a good deal of hypertrophy of the left ventricle, with a murmur having the characters of a mitral regurgitant one, without the existence of any disease of either the mitral or aortic valves. With all these and some other forms of heart disease extreme general dropsy may occur; but it is in the highest degree important to recollect that digitalis is not equally capable of doing good in all these different diseases, and that a careful discrimination must be made, or the

employment of this drug will very often lead to great disappointment to the practitioner, and it may be harm to the patient. For digitalis, while able in some forms of heart disease to remove most of the symptoms, even when these are of the gravest character, can accomplish little or nothing in the other forms.

It is now proposed to pass in review those kinds of heart disease which may be benefitted by digitalis, and also those which are but little if at all influenced for good by this medicine.

With a patient presenting the following symptoms and physical signs digitalis will be found of eminent use. There is present dropsy, which may be extensive; the breathing is much distressed, in the earlier stages of this disease only periodically, and is so especially at night; but when the disease is at its worst it is continously bad, although it becomes paroxysmally worse. The patient cannot lie down in bed,[1] and is perhaps obliged to sit in a chair with the head either thrown back, or more rarely leaning forward on the bed or some other support. The jugular veins are distended and may feel sore, and the face is dusky and livid. The pulse is very frequent, feeble, fluttering, and irregular. The urine is very scanty, high-coloured, and deposits copiously on cooling. The heart is seen and felt to beat over a too extensive area; and the chief impulse is sometimes at one spot of the chest and sometimes at another. The impulse is undulating, and the beating very irregular and intermittent. The physical examination betrays great dilatation of the left ventricle, with often a not inconsiderable amount of hypertrophy. There is mostly heard a murmur, having the characters of one produced by mitral regurgitant disease, and there may also be disease of the aortic valves.

A case presenting these symptoms and physical signs will very generally respond quickly to digitalis, if given in the fol-

1 These patients, and also those who suffer from much oppression of the breathing from other diseases of the heart, are often, on account of the dyspnœa, unable to sleep, and in consequence they become much exhausted and wearied out. By the hypodermic injection of small quantities of morphia (one-sixth or one-twelfth of a grain) the dyspnœa may be much quieted, and sleep more or less refreshing obtained. This treatment may be adopted without fear of any disagreeable consequences. Since this foot-note was written Dr. Allbutt has recommended in the *Practitioner* this treatment, which has been long employed by the author and many others.

lowing way. In all treatment, the object must be to obtain the greatest therapeutic effects with the smallest possible dose of medicine. This is particularly important with a powerful drug like digitalis; for if a large quantity be at once employed, it often appears to increase the embarrassment of the heart, and relief will only be obtained when the dose is diminished. And further, it is important not to give a larger quantity of the medicine than is necessary, as it is very possible the patient may require its use for a long period; for in such a case as above described, after a time the patient becomes accustomed to the medicine, and the dose which at first did good seems to have partially lost its effect when a larger quantity is required; but this could only be given with the greatest caution, and even with some danger, if the maximum quantity had in the first instance been employed. The importance of these remarks will be the greater if it should prove, as has been asserted, that digitalis is a cumulative poison. It is further important to keep the dose of digitalis as small as possible, or sometimes, after the medicine has been continued for some time, it produces general convulsions, which generally end in death.

The form of the preparation has, the writer believes, much to do with the success of the drug. The infusion, fresh and well made, will generally give far better results than the tincture. It is advisable to begin by using a drachm of the infusion twice, or not more than three times, a day. In many instances this will be enough. The effects on the pulse, the urine, and dropsy, are to be carefully watched. Under the influence of this medicine, when it is in sufficient quantities and does good, the pulse grows much stronger, more regular, and much slower, till, in very many cases, all irregularity ceases, and it becomes natural in frequency and rhythm. At the same time the urine, which previously may have been not more than half a pint in the twenty-four hours, is increased to one, two, four, or even eight pints a day. With this increase, and in proportion to it, the dropsy diminishes till it disappears. Should the influence of the drug be small or unnoticeable, the quantity in a few days may be increased; but it must be remembered, the good effects of digitalis may not become apparent till three or four days have elapsed. If an increase of the infusion be required, then a

drachm may be given every three or four hours, as the circumstances indicate, or one drachm may be given in the morning, and two in the middle of the day, and two at night. Should the symptoms resist this additional dose, another increase must be made in a few days. It not uncommonly happens that a small dose at first admirably succeeds, and removes much of the dropsy, but fails to accomplish all that is desired; when an increase in the quantity of the medicine must gradually be made.

The cases which we are now treating of require in most instances the free administration of alcoholic stimulants, and the best of these, on account of its diuretic action, is gin.

When a patient with the above-mentioned symptoms dies, there is found at the post-mortem examination great dilatation of the left ventricles, with very generally much true hypertrophy of its walls. Sometimes there is incompetence of the aortic or mitral valves, or of both; but by no means uncommonly both these sets of valves are healthy, and admit of no regurgitation when tested with water, although there has existed, during life, a murmur having the characters of a mitral one.

Digitalis will be found especially useful when there is much dilatation and hypertrophy of the left ventricle without any valvular disease, although a mitral murmur may have been heard during life; but unfortunately it is at present impossible in many cases to decide before death whether there is mitral disease or not.

It has been asserted, by eminent authorities, that if there be aortic disease digitalis is worse than useless, and will embarrass still further the heart, and increase the difficulty of breathing; but after a prolonged and careful investigation of this question the author is convinced that, in a case presenting the physical signs and symptoms above enumerated, the existence of aortic disease, whether obstructive or regurgitant in character, or both, does not in any degree contra-indicate the employment of digitalis.

Of the indications for digitalis above mentioned, the irregularity of the pulse is the most important, and is the one which most decidedly calls for this medicine.

Earlier stages of the above disease are not unfrequently met

with, when the symptoms, though troublesome, are not yet very severe. In these forms it is not uncommonly seen in children who for some time previous have had rheumatic fever. In such patients the heart gives evidence of great dilatation and hypertrophy of the left ventricle, whose impulse is strong and heaving. There is generally a systolic apex murmur (mitral) with perhaps systolic apex thrill. At first these patients are only troubled with palpitation or exertion, but after a variable time, it may not be till many years have elapsed, there occur paroxysms of palpitation accompanied by urgent dyspnœa, and so often repeated, it may be, that the child cannot lie down at night, and is obliged to be propped up with pillows. In a further stage of the complaint the dyspnœa is continuous, but becomes paroxysmally worse, and the child is unable both night and day to assume a horizontal position. The pulse is generally in all these stages of the disease quite regular, but is generally very frequent and feeble, although the heart at the same time throbs violently against the chest. There is no dropsy, or this is slight and transient, appearing for a few days and then leaving, till for some reason the heart becomes more embarrassed again.

All these symptoms may be speedily removed, and the comfort and general well being of the patient in consequence greatly increased, by digitalis. Under its influence the tumultuous strongly beating heart grows quiet and contracts less forcibly, while at the same time the pulse grows less frequent and much stronger.

The circumstance, which may be frequently witnessed, that in cases such as have just been described the pulse may be very weak and feeble, while the heart contracts with unnatural strength, is of importance and is worthy of attention, as is also the circumstance that while the digitalis strengthens the pulse it subdues the unnatural force of the heart's beat.

The first of these circumstances is of importance, as it is commonly concluded, in the cases now treated of, that the weak pulse indicates a correspondingly weak heart, and hence it has been concluded that, as digitalis is eminently suited for these cases, it is useful when the heart is feeble. Such a conclusion is certainly erroneous; for, as has been said, while the pulse is very weak the heart can be felt to strike the chest with a very consi-

derably increased force; and further, when these patients die the left ventricle is found, very considerably dilated, it is true, but also very considerably hypertrophied.

This want of correspondence between the strength of the pulse and the heart's contractions becomes still more apparent when these patients are seized with an attack of palpitation. The heart then sometimes beats with sufficient strength to make its movements visible through the clothes, or even to shake the bed, and yet at the same time the pulse is felt to be very small and feeble. Where this discrepancy between the vigour of the heart's contractions and the strength of the pulse is permanent, it would appear as though the patients were troubled with a perpetual palpitation, which, however, becomes paroxysmally worse. This discrepancy between the pulse and the heart, which may be seen as a form of irregularity on the part of the heart, digitalis can correct; end hence, while the heart under its influence becomes quieter and less forcible in its action, the pulse grows stronger as well as slower, and we have an instance in which digitalis controls a too strongly contracting heart.

In older people, an early stage of the severe disease which has been depicted may also be witnessed. In such there is much irregularity of the heart's action, and the pulse is also irregular and intermittent. On auscultation a mitral murmur may very generally be detected, and there is also perhaps an apex systolic thrill. These people may suffer from constant dyspnœa and from attacks of palpitation, during which the embarrassment of the breathing is much aggravated. There is no dropsy nor lividity of the skin, and the urine is secreted in natural quantity. In such a case infusion of digitalis in drachm doses, repeated, once, twice, or three times a day, will give most complete relief, quieting the palpitations, removing the dyspnœa, and regulating the pulse.

If in any of the milder (as also in the severer) forms of these complaints aortic valvular disease be present, such a circumstance is not to be considered an indication against the administration of digitalis.

It is an important question, for how long a time can the digitalis afford relief and preserve life? As might be expected, the good results obtained will depend on the degree to which the

disease has advanced. In its earlier stages the relief may be so complete as to permit the discontinuance of the medicine, and the patient remain relieved for months or many years; but there generally occur occasional returns of the symptoms, which may be again and again removed by a fresh recourse to digitalis. Thus life may be greatly prolonged and made useful, although the sufferer is unfit for very arduous work. Even when dropsy has appeared, and has become extensive, great and permanent relief may sometimes be obtained; but in most cases where the disease has much advanced, and has lasted for some time, the relief—although it may be very great, and all the dropsy and dyspnœa may be removed—is of short duration, and the disease, as it were, catches up the medicine, and progresses in spite of it, till it ends in death. It must be received as a bad sign if a considerable dose of the medicine is required before relief is obtained, as also when it is necessary to give the medicine in increasing doses to maintain the good effects at first obtained.

Before the remarks on this form of heart disease are concluded, it may be mentioned that if no dropsy be present the digitalis will not considerably increase the quantity of urine, and will not therefore act as a diuretic; for usually where there is no dropsy the urine is excreted in natural quantities.

The following appears to be the history of the progress of the disease above described. At first, from valvular disease, or from some at present unexplained cause, the left ventricle dilates, and as it dilates also hypertrophies. When the dilatation and hypertrophy have progressed in some degree, the heart's impulse becomes strong and heaving, and is felt over an extensive area of the chest, while the patient is afflicted, at first on exertion only, with attacks of palpitation and dyspnœa. Next, as the disease advances, either gradually or suddenly, from some cause, the impulse becomes still stronger, more extensive, and more heaving, and the contractions are very frequent. At the same time the breathing is permanently difficult, but becomes with each attack of palpitation paroxysmally worse—so bad, indeed, as to give rise to the idea that the patient cannot live through it.

The pulse in this stage is frequent, small, and weak, and in

strength is altogether out of proportion to the strongly contracting, heaving, tumultuously acting, left ventricle.[1]

As the disease still further increases, there is added to the above symptoms irregularity of the heart's action and irregularity of the pulse. With all the above symptoms and physical signs, there is at first neither fulness nor pulsation of the jugular veins, nor any lividity of the face, nor is there any dropsy; but with the further advance of the complaint these symptoms arise, and are probably produced in the following way.

In consequence of the irregular action of the walls of the heart and its columnæ carneæ, the mitral valves become incompetent, and permit of regurgitation. There may also be disease and incompetency of the mitral valves, with permanent regurgitation from the ventricle to the auricle, which regurgitation will be increased by the irregular action of the heart. By this regurgitation there is offered considerable obstruction to the passage of the blood through the lungs, and hence the right side of the heart is distended, and its valves in their lieu become incompetent, leading to regurgitation back into the veins, and to general dropsy, with lividity of the skin.

When the disease has reached its worst stage, the heart's action is so embarrassed that, although its walls are hypertrophied, it strikes with each beat feebly against the chest, and its impulse may be scarcely perceptible.[2] The pulse is also frequent, feeble, irregular, and intermittent.

In some cases, and especially with children, the disease may advance to a great degree without the occurrence of any irregularity of the heart's action, but with other patients such irregularity occurs early in the complaint.

At the post-mortem examination, and on such examinations these statements are founded, the left ventricle is found, as has already been stated, very considerably dilated, and also very greatly hypertrophied. Often the mitral, and not unfrequently the aortic valves are in a greater or less degree diseased, and admit of a variable amount of regurgitation.

1 Digitalis controls this too strong action of the left ventricle, and then affords an instance of its usefulness in a hypertrophied and too powerfully acting heart.

2 Digitalis in such a case quiets the heart, removes the embarrassment, and strengthens very considerably each beat. This is an instance in which the medicine strengthens the beats of an apparently weak heart.

With such a heart digitalis will be found of great service. The following explanation of its action is suggested.

By restoring order to the heart's movements, the regurgitation which was caused by the irregular action of the columnæ corneæ is removed, and regurgitation from the left ventricle to the auricle, and thence through the lungs to the right side of the heart, is prevented. If such be the explanation of its action, then it will only remove with completeness the symptoms when the mitral regurgitation is of the dynamic character, and will not be able to remove those which depend on organic disease of the mitral valves. Such, indeed, is the case; and where, as frequently happens, there exists, in addition to irregularity of the heart's action, organic disease of the mitral valves admitting of regurgitation, the digitalis, by removing the former, will remove the dropsy and other symptoms which it produced, but will leave the dropsy, and that share of the symptoms dependent on the organic disease of the valves, unaffected.

The truth of this statement may be verified, as such cases as the following kind unfortunately too often occur. A patient with dropsy, and with symptoms and physical signs like those above described, is partially benefited by digitalis, and much of the dropsy and dyspnœa is removed, but the medicine is unable to afford complete relief. After death there is found much disease of the mitral valve which permitted of regurgitation, and the left auricle is in consequence much distended. Such a condition of the mitral valves the digitalis of course could not remove, but that share of the dropsy and other symptoms which were produced by the irregular action of the heart, the digitalis was able to remove. The truth of these statements may be abundantly verified by post-mortem examination, combined by clinical observation, which investigations will show that digitalis is useful in proportion to the degree in which the dropsy, &c., is due to irregular action of the heart, and is independent of organic disease of the mitral valves.

Cases of the following kind not uncommonly occur, which may be greatly benefited by digitalis.

A patient (who has been perhaps troubled with slight palpitation of the heart for some years) on catching a cold is attacked with bronchitis, and has, in consequence, the palpitations much

increased. These palpitations in their turn excite severe paroxysms of dyspnœa. On examination the heart may appear healthy, or there may be only a slight mitral murmur. Such persons may have the palpitations removed from them, and the breathing made calm, by digitalis.

This medicine, however, leaves the bronchitis untouched, except that, by easing the breathing, it indirectly assists expectoration, and enables, by the same means, the patient to obtain refreshing sleep. In this indirect way digitalis may benefit the bronchitis, but the medicine here acts on the heart; and if with bronchitis there occurs much palpitation or irregularity of the pulse, this remedy is indicated.[1]

Before treating the paroxysmal dyspnœa which may be present with bronchitis, it is important to learn if the paroxysms are accompanied by, and depend on, palpitation of the heart; for if so, ordinary antispasmodics, as lobelia, chloroform, or ether, will be without avail. Digitalis is the remedy generally required, and a drachm of the infusion taken twice or three times a day, is generally sufficient.

Functional palpitations, and those attacks of palpitation which occur with hypertrophy of the heart,[2] may be relieved by small doses of digitalis. Here, prabably, the palpitations are owing to some temporary aberration of function which the digitalis can set aside. It is certainly wrong to view the palpitations as the result of too much healthy action.

Those forms of heart disease which may produce dropsy, but over which digitalis has little or no control, will next be spoken of.

General dropsy dependent on heart disease is in some instances produced in the following way. The lungs degenerate and become emphysematous, and hence offer obstruction to the free circulation of the blood from the right to the left side of the heart. To meet and overcome this obstruction the right ventricle grows hypertrophied, but only sufficiently so to meet the obstruction offered to the circulation; and there is, unlike the healthy heart, but little reserve power left in this organ, and hence, on the occurrence of any sudden access to the obstruction of the circulation

1 If during a fit of palpitation the heart beats very violently, one or two drops of tincture of aconite, given every quarter of an hour, may succeed in quieting it better than digitalis.

2 Aconite is very valuable in such cases.

through the lungs, the right ventricle becomes unequal to the task thrust upon it. Such a sudden access of obstruction is occasionally bronchitis; and on the occurrence, therefore, of an attack of this disease, the blood, unable to pass through the lungs with sufficient ease, accumulates in the right cavities of the heart, and overloads them to distension, till the tricuspid valves becomes incompetent, and permit of regurgitation from the ventricle to the auricle, and thence into the veins, where, if the obstruction in the lungs be great, dropsy will ensue. In such cases the dropsy varies with the amount of bronchitis; as this increases or declines, so does the dropsy grow greater or less. If the distension of the right cavities last a considerable time, then, on the disappearance of the bronchitis, the cavities do not regain their natural size, and the tricuspid incompetency becomes permanent, and the dropsy also.

In such a disease, digitalis appears to possess very slight, if any power to strengthen the heart to overcome the obstruction in the lungs, and in consequence it is without any good influence unless the heart acts irregularly, which irregularity, when at all extreme, and even without either hypertrophy or dilatation of the left heart, or disease of its valves, adds to the difficulty of the breathing, diminishes the quantity of urine, and produces dropsy, or increases it if it is already present from the obstruction in the lungs. Such irregularity digitalis can remove, and with its removal will disappear that excess of the symptoms which it produced.

The inability of digitalis to strengthen the heart, and thus enable it to overcome any obstruction offered in the lungs, is well shown in cases of the following kind. A patient of middle or advanced age, whose heart is much dilated on the left side, and which acts irregularly, has in consequence suffered from dropsy, dyspnœa, &c., which effects have been thoroughly removed by digitalis. On catching cold, and on the occurrence of bronchitis, the dyspnœa, lividity, dropsy, &c., return, and it would naturally be thought that digitalis, which had previously done so much good by removing the same symptoms, would be again of service. But such is not necessarily the case, and a nice discrimination of the circumstances producing the return of dropsy, &c., must be made. Such a return, if there is much emphysema of the lungs, is not uncommonly solely due to the

obstruction caused in the lungs by the bronchitis and emphysema, and is in no way dependent on any effect the bronchitis has produced on the dilated left ventricle. In such a case digitalis can do no good, but remedies possessed of the power to control the bronchitis are needed. If, however, as not uncommon, the bronchitis affects the dilated left ventricle, and brings back the conditions which were present when the digitalis did so much good, then a return to this medicine will again afford relief. In deciding the question whether digitalis should be given or not, attention must be directed to the following points. If on the return of the dropsy, &c., there is also excited fits of palpitation, and with these also attacks of dyspnœa, and if also the heart be made to beat irregularly, digitalis is required; but if, on the other hand, although there is hurried breathing and a very quick pulse, the symptoms just mentioned are absent, the patient will obtain no good from digitalis.

There are other serious diseases of the heart by which dropsy may be produced, but over which digitalis has no control, and in which, unless care is taken, it may do much harm. The following is a concise description of such cases.

The patient, often in the prime of life, and it may be without any history of rheumatic fever, has for some time, perhaps for many years, suffered on exertion from palpitation. On auscultation there is heard an aortic, obstructive, or regurgitant murmur, or both combined. The heart is hypertrophied to overcome the obstruction to the circulation occasioned by the aortic valvular disease, and by this compensation the patient is saved from any troublesome symptoms except some palpitations. After a variable time serious symptoms may arise, which generally rapidly increase in severity, and in the course of a few weeks or months the patient dies. On this aggravation of the disease there occur paroxysms of palpitation, accompanied by urgent dyspnœa, which attacks may be occasioned by the slightest exertion, but also occur without any such provocation. Soon the dyspnœa becomes constant as well as paroxysmal, and about this time there appears dropsy in the legs, which rapidly extends till it invades the greater part of the body, and is often in excess in the pleural or peritoneal cavities. During the whole progress, and to the termination of the disease in death, *both the heart and pulse beat regularly and without any intermissions*, and the latter has often

the characters which are significant of aortic regurgitant disease. There is no lividity of the skin, but on the contrary this is strikingly pale and waxy looking; neither is there any fulness or regurgitation into the jugular veins. In addition to the aortic murmurs there may be one having the character of mitral regurgitation, but after death these valves are generally found healthy and competent.

The following appears to be the pathological history of such patients. On the occurrence from any cause of disease of the aortic valves the left ventricle grows hypertrophied, and is thus enabled to overcome the obstacle offered to the circulation by the valvular affection; and while the hypertrophy keeps pace with the disease, the patient is only troubled by the increased action of the hypertrophied heart, and in this condition the patient may live for many years but little incapacitated for work. After continuing in this state for a variable time, the disease of the heart may produce serious and fatal symptoms in the following ways, in both of which the effect on the circulation is the same. In the one case the disease in the aortic valves advances with great rapidity, so quickly indeed as to make it impossible for the left ventricle to hypertrophy sufficiently to meet the obstruction to the circulation offered by the aortic disease. In consequence much derangement of the circulation ensues, on which the serious symptoms above detailed depend.

In the other case the disease of the aortic valves may remain stationary, or progress very slowly, but the hypertrophied left ventricle undergoes (sometimes with great rapidity) degeneration, and becomes much softened, and in consequence of these changes in its structure it loses much of its power, and is unable to meet the increased demand made upon it in consequence of the disease of the aortic valves, and hence is produced a disturbance of the circulation similar to that of the former case, and there then arises the dyspnœa, palpitations, &c., which have been described.

In such cases digitalis will do little or no good; it sometimes appears to control in a slight degree the palpitations and the attacks of dyspnœa, but it not unfrequently happens that under its influence the pulse grows feeble and intermittent, an effect the author has witnessed when the substance of the left ventricle was much degenerated and softened.

ON THE RELATIVE EFFECTS OF MORPHIA AND ATROPIA ON THE TEMPERATURE OF THE BODY.

BY ROBERT P. OGLESBY,

Assistant Demonstrator of Anatomy in the Leeds School of Medicine.

FROM the hypodermic administration of morphia and atropia in practice, and the beneficial results thus obtained, I have been led to make investigations as to their relative effects on the temperature of the body, believing that their value as therapeutic agents, when administered hypodermically, has hitherto been much undervalued. It has occurred to me to administer by injection beneath the skin, both these drugs in those cases of collapse which not unfrequently occur during severe attacks of summer cholera, and in those cases of cholera which present marked features, leading one very cautiously to draw the line (if it be possible) between our severe summer cholera, and the one of a more deadly nature. That these drugs exercise a beneficial effect when administered hypodermically during the stage of collapse, I think none will deny who have given them a fair and impartial trial. I venture to put forward the opinion, that they act beneficially by rapidly increasing the temperature of the body, when administered in small doses; and I would advise that the use of very small doses, repeated two or even three times at short intervals, is preferable to the use of an ordinary minimum dose; for after the administration of an ordinary dose, in a case where the powers of life are very low, the drug (either morphia or atropia) first exercises a marked effect by speedily lowering the temperature of the body, an effect which will often last for several hours, to be followed by a rise which is often so quick and so considerable as to place the patient in imminent danger.

Although the effects of even a very small dose of either drug

is to quickly lower the temperature of the body, yet such effect is of short duration, and is speedily followed by a very steady rise, lasting over a series of hours.

To arrive at some definite conclusion on the subject, I determined to investigate it closely by experimenting upon animals. This I have done largely, and I must own that to my own mind the proofs are very conclusive.

I was surprised to find how in practice the action of the two drugs coincided, when administered hypodermically, in the same class of cases; but more so, to discover their similarity of action when administered in health. When referring to the action of these drugs, I advert only to their action on the temperature of the body. I purposely in this paper avoid discussing the various effects the drugs produce on the nervous system, the blood vessels, &c., because I did not apply myself to the elucidation of such phenomena. For information regarding the action of belladonna, I would refer my readers to the writings of Dr. John Harley, and to an admirable paper on the subject by Dr. Fraser, in the *Journal of Anatomy and Physiology* for May 1869.

I may relate, as an appendix to one or more cases, the chief symptoms which I observed after administering poisonous doses of belladonna, and also the appearances found on post-mortem examinations.

The temperature in each experiment was taken in the rectum, and the minimum time the thermometer remained was six minutes; the maximum, fifteen. To avoid fallacy, the temperature in each case was carefully noted several times before the drug was administered. Practically, I found that the thermometer rarely, if ever, rose after the lapse of three minutes, providing the bulb to have been some considerable distance within the sphincter ani. The exact distance the themometer is placed within the rectum I believe to be of great practical importance in making observations of a very reliable nature. The practice of only inserting the bulb within the sphincter, and not fairly in the bowels, leads to great discrepancy in the registration of temperature by different observers in the same case.

It may not be out of place to notice the effect small doses of morphia have in increasing the appetite of animals. If the dose has been small, and the animal not visibly affected by it, the desire for food is often intense, and large quantities are

consumed greedily. This is especially noticeable in the case of rabbits and guinea-pigs.

Experiment 1.—A healthy young cat, deprived of food for several hours, had a temperature of 101°.

At 9.30 A.M. a solution of the bimeconate of morphia, containing one-eighth of a grain, was injected beneath the skin :—

A.M.	Temp.
10	99° 1′
11	99 0
12	99 4
1 P.M.	100 3
2 ,,	102 1
4 ,,	102 3

In the foregoing case the effect of the dose was very marked, the cat being much affected by it, jumping and running round the room, and uttering plaintive cries. The increase of temperature lasted many hours.

Experiment 2—A guinea-pig, four hours after a meal, had a temperature of 101° 2′.

At 4 P.M. it was injected beneath the skin with a solution of acetate of morphia containing one-eighth of a grain :—

P.M.	Temp.
4.30	101° 2′
5	102 2
5.30	102 4
6	103 0
8	104 1

In this case, 101° 1′ was the maximum degree attained. This degree was maintained with but little alteration until 10 P.M., when there was a very sudden and progressive fall to rather below the normal standard, probably owing to the long fast the animal had undergone.

Experiment 3.—A strong terrier, three hours after a meal, had a temperature of 102° 3′. At 4.30 P.M. was injected hypodermically with a solution containing one-eighth of a grain of morphia :—

P.M.	Temp.
5	101° 4′
5.30	101 1
6	101 1
6.30	101 4
7	102 1
8	102 4
9	103 1

The maximum temperature in this case was steadily maintained for several hours, although the dog from time to time vomited freely.

Experiment 4.—A guinea-pig, after fasting ten hours, had a temperature of 102° 1′.

Injected at 6 P.M. with one-sixth of a grain of morphia beneath the skin :—

P.M.	Temp.
6.30	102° 1′
7	102 1
7.30	103 2
9	104 1
11	103 0
12 A.M.	102 3

Experiment 5.—A rabbit, one hour after a hearty meal, had a temperature of 103° A solution containing one-eighth of a grain of acetate of morphia was shortly afterwards (12.30 P.M.) injected hypodermically :—

P.M.	Temp.
1	103° 1′
2.30	102 3
3.30	102 4
5	103 3
6	103 4
7	104 0
8	103 2

Experiment 6.—A strong cat, after fasting for several hours, had a temperature of 102°.

At 3.30 P.M. it was injected beneath the skin with a solution containing quarter of a grain of acetate of morphia.

P.M.	Temp.
4.10	101° 3′
4.35	104 0
6.50	104 1
8	104 2
10	104 2
11	103 1
11.30	103 1
12	102 3

The large dose of quarter of a grain had a very marked effect on the condition of the cat. It had many violent convulsions, and an inability to use the hind legs properly. This condition did not pass off till the following day.

In the following experiments it will, I think, prove that the action of atropia on the temperature of the body is similar to that of morphia.

Experiment 1.—A large rabbit, twelve hours after a meal, had a temperature of 103°. At 6 A.M. was injected hypodermically with a solution containing one-sixth of a grain of sulphate of atropia:—

A.M.	Temp.
7.25	102° 1′
8.40	102 0
9.50	103 1
11.40	103 3
12.40 P.M.	104 0
2 ,,	104 1
5.1 ,,	103 3
8 ,,	103 0

Experiment 2.—Twelve hours after a meal, a healthy and well-grown rabbit had a temperature of 103° 3′. At 7 A.M. was injected beneath the skin with a solution of sulphate of atropia containing one-sixtieth of a grain:—

A.M.	Temp.
7.35	103° 1′
8.50	104 2
10	104 3
11	104 0
3 P.M.	102 2
6 ,,	101 1
10 ,,	99 4

At this time the rabbit was seized with violent convulsions, which lasted until the time of its death, thirty hours after the administration of the poison. For several hours previous to death the temperature fell very steadily, and a few minutes before death the thermometer registered 94° 2′.

A post-mortem examination, made shortly after death, showed considerable discoloration of the muscles of the back in the lower dorsal and lumbar region from extravasation of blood. On examining the cord and its membranes, an effusion of blood between the membranes and cord was found at a point corresponding to the one in the muscles of the back. Around the medulla there was a thin layer of blood. The organs of the body were quite healthy, with the exception of the right lung, which was slightly congested.

Experiment 3.—A guinea-pig, after fasting twelve hours, had a temperature of 102° 1′. At 7.20 A.M. a solution containing one-fortieth of a grain of sulphate of atropia was injected beneath the skin :—

A.M.	Temp.
8	101° 4′
8.30	101 0
9	102 3
9.30	102 4
10	103 0
11	103 2
12	103 4
1 P.M.	103 1
2 ,,	102 4
3 ,,	102 4

Experiment 4.—A strong rabbit, ten hours after a meal, had a temperature of 103°. Injected beneath the skin at 6 A.M. with a solution containing one-fiftieth of a grain of sulphate of atropia :—

A.M.	Temp.
6.20	102° 3′
6.50	102 1
7.30	102 2
8.30	103 1
9.30	103 2
2.30 P.M.	101 4

Animal fed at 2.40 :—

P.M.	Temp.
4	102° 0′
5	102 3
6 30	103 3

Experiment 5.—A rabbit, four hours after a meal, had a temperature of 103°. At 2.30 P.M. injected beneath the skin with a solution containing one-fortieth of a grain of sulphate of atrophia :—

P.M.	Temp.
3	102° 3′
3.20	102 3
4	102 3
5	103 0
6	103 1
7	103 1
8	103 2
9	103 1
10	103 0

Experiment 6.—A cat immediately after a meal had a temperature of 103°. Injected at 6 P.M. with a solution containing one-sixtieth of a grain of atropia:—

A.M.	Temp.
6.15	102° 4′
6.30	102 3
7	102 3
7.30	102 2
8	102 4
8.30	103 1
9.30	103 2
10.30	103 2
11.30	104 0
12.30 P.M.	104 0
1.30 ,,	104 0
3 ,,	103 4
7 ,,	103 1

In many instances the same animals were experimented on again and again, always allowing a lengthened period to elapse between each experiment—generally a fortnight.

The results were very conclusive. In but two instances was there any marked difference in the effect of the drugs at a second or third experiment on the same animal, and such I believe to have been due to causes sufficiently palpable to render such experiments valueless. I refer to the general health of the animal. In both cases the animals were evidently out of health, although they had shaken off the effects of the drugs administered previously, and appeared to enjoy good health till a few days before the second experiment. In these cases the temperature fell very rapidly, and remained at a low point for many hours, a corresponding rise afterwards resulting.

To Mr. Enoch Snell, of Leeds, my best thanks are due for his kindness in assisting me during some of my earlier investigations on this subject.

ON THE TREATMENT OF CARBUNCLE.

BY JAMES GREY GLOVER, M.D.

THE treatment of carbuncle, like many other points in therapeutics, has got into ruts, and even if a larger experience shall not fully justify the treatment I mean in a few words to recommend, good will be done by getting out of the ruts. There have been two points in the treatment of carbuncle on which authorities and practitioners have been very much agreed; the first a surgical point, and the second a medical one—a crucial incision and plenty of stimulants. This creed has been so extensively received and acted upon, that I question it with all proper hesitation and diffidence. But nevertheless I do question it seriously, and recommend another line of practice less extreme, not painful, and I venture to say very effective in the majority of cases of carbuncle occurring in tolerably healthy persons, free from serious organic disease.

It is well in all cases of carbuncular disease to look to the state of the great organs and the kidneys. Supposing there to be any serious disease, as albuminuria or diabetes, these would have to be regarded, but they would not materially affect the principles of the treatment which I am about to describe, and which answers very well in my experience.

The negative features of this treatment are the absence of incisions, the absence of poultices, and the absence of huge quantities of wine or other stimulant with which it has been too much the fashion to heal and sometimes poison the patient.

As regards abstention from the crucial incision, this point has been lately so authoritatively put before the profession in the

Lancet, by Mr. Paget, that I feel more free to recommend this negative practice, which I had come to believe in before Mr. Paget declared it to be his. I never could see the good of incisions where the cellular tissue was implicated and in a sloughing state. Incision seldom liberates the sloughs, for the liberation of these is a vital process, and their separation is generally not effected until several days after the incisions. These incisions do not tend to save skin, because already the vitality of the skin is generally compromised, as shown in its bing livid in colour, and perforated at various points. The most that incisions do in this state is to liberate blood, and this does not tend to support the waning vitality of the tissues. Perhaps the greatest argument for incision is that it tends to relieve the pain and tension of the part. But I think the pain can be relieved in a less objectionable way. Sometimes in bad cases of carbuncle there are boggy spots containing pus, almost as if they were pyæmic deposits, which it is well to liberate by an incision, but it need not be a long or crucial one.

Further, I do not like a prolonged application of poultices. Beyond the first day or two I think they are objectionable, and tend to weaken and relax the part, and favour the spread of the carbuncular action.

The administration of large quantities of stimulant and all sorts of nourishment in cases of carbuncle is now only part of a general fashion of excessive feeding that is already going out. I am satisfied that of all the forms of blood-poisoning which have been so prevalent of late, that by alcohol is not the least common. I heard of a little infant, the child of a patient of mine, afflicted with diarrhœa, which, at the sea-side, in two or three days got half a bottle of brandy. Of course it died, very likely of pure narcosis. I am very glad that Mr. Paget has raised his powerful voice against the routine practice of excessive stimulation in the clinical lecture referred to; and now, in a few words, I shall describe the treatment which I pursue in carbuncle, and which answers well.

Instead of the ordinary dressing of linseed poultices, I apply turpentine ointment on a piece of lint the size of the carbuncle, or slightly larger, and over this a large piece of cotton-wool. The ordinary turpentine ointment of the Pharmacopœia is rather

strong, and bears generally to be mixed with equal parts of lard, or spermaceti ointment. This dressing is light and clean, and slightly stimulating. It seems to favour the vital process of separation of the sloughs, and the return of a better hue to the affected skin. It should be changed twice or thrice a day, according to the stage and degree of the disease and the amount of discharge.

As to the general medical treatment of the patient, there are two points which I think important: first, the administration, three times a day, of quinine, two grains or so, in conjunction with tincture of the perchloride of iron, in ten or fifteen minim doses, well diluted; and secondly, the administration nightly of a grain of opium to relieve pain and procure sleep. More might be necessary, but I have always found this to be sufficient.

The diet of the patient should be good and nourishing; but it should be simple, and not incommoding. I mean the patient should neither be stuffed with food, nor heated with stimulants. But beef-tea or milk may be administered *ad libitum*, and I think a glass or two of wine in the day helps the patient. If the tongue is little furred, and there is not much anorexia, then the less departure from ordinary sensible feeding the better.

Turpentine ointment and cotton-wool locally, an opiate at night and quinine and iron three or four times a day, and a good, simple, nourishing diet, are the essential points of the treatment I recommend, and which, I think the profession will find satisfactory in the majority of cases. Within the last few days I have had a case of carbuncle in a patient about fifty, which almost provoked incision by its tension and tendency to spread, but I abstained, and practised the above treatment, and it has done excellently.

Reviews.

1. *Die chronische Lungenschwindsucht und Tuberculose der Lunge, ihre Ursache und ihre Heilung.* Von Dr. Hermann Brehmer. Zweite umgearbeitete Auflage. Berlin, 1869.

   (*Chronic Pulmonary Consumption and Tuberculosis of the Lungs, their Cause and their Cure.* By Dr. H. Brehmer. Second Edition. Berlin, 1869. London: Williams and Norgate.)

2. *On the Influence of the Alpine Climates on Pulmonary Consumption.* By Hermann Weber, M.D. *British Medical Journal,* Vol. II. 1868.

3. *Die hochgelegegenen Plateaus als Sanatorien für Schwindsuchtige.* Von Dr. Friedrich Küchenmeister, in Dresden. Separatdrück aus d. öesterreich. *Zeitsch. f. prakt. Heilk.* Wien, 1868.

   (*The Elevated Plateaux as Health-resorts for Consumptive Patients.* By Dr. F. Küchenmeister.)

4. *Die Landschaft Davos (Kanton Graubünden) als Kurort gegen Lungenschwindsucht.* Von Dr. A. Spengler, Arzt auf Davos-Platz. Basel, 1869.

   (*The District of Davos (Grisons) as a Health-resort in Pulmonary Consumption.* By A. Spengler. Basle, 1869. London: Williams and Norgate.)

5. *On the Treatment of Consumption by prolonged Residence in Elevated Regions.* By Hermann Weber, M.D. *Medico-Chirurgical Transactions,* Vol. LII. p. 225. 1869.

In studying the above-named works we can observe the progress of one of the most momentous inquiries which has ever engaged the attention of practical physicians. There is no need to say a word in order to persuade English medical men either of the pressing importance of the subject of climatic treatment in phthisis, or of the unsatisfactory state in which our knowledge of this matter still remains. Light seems, however, to be breaking from all sides at once upon the mystery of this disease. The readers of this journal are doubtless acquainted, from other sources, with the remarkable discoveries recently made with

regard to the pathology of so-called "phthisis;" and we have ourselves briefly analysed a paper of Dr. H. Weber on the new climatic treatment of the disease. We propose, now, to show how extensive and weighty is the existing literature of the high-level consumption treatment; and we would even hope that our impartial criticisms may assist in indicating the essentials of a climatic treatment of phthisis which will avoid some extremes, both on the one hand and on the other. But it may be said, at once, that the mass of evidence produced in the works now to be reviewed is far too great for us to question any longer that we have here the materials for a most important revolution in our ideas as to the appropriate treatment of at least a large class of consumptive patients; and we regret that among some of the older English practitioners there has been manifested a rather unreasonable reluctance to give the new facts a fair hearing.

When one remembers the stereotyped ideas as to the kind of climate suitable to the treatment of consumption with which the whole profession was impregnated until quite within the last few years, one is tempted to exclaim, that there is no real basis of science for our hygienic doctrines at all, or such violent swings of the pendulum would not be possible. *Cœlum non animum mutant* is a saying difficult to apply to climatologists whose faith has deserted the moist, muggy, winterless lowlands that used to be in fashion, and fled to their precise opposite—the cold, dry, and keen atmosphere of the Andine valleys, or the Engadine. We suspect that the public find this transition passing strange, and that the more cynical of them mock at the doctors and their mad ways. Yet the violence of the change is more apparent than real, and it will be well to take care that enthusiasm for the new ideas does not blind us to the fact. One of the first tasks which a reviewer of this subject ought to set himself is the repairing a great injustice which has been done to our countryman, the late Dr. Archibald Smith. Dr. H. Weber has already pointed out the priority of this gentleman's observations on high-level health-resorts in consumption; but we have a special motive for recurring to the subject. Dr. Brehmer, whose treatise, interesting in many respects, is disfigured by a certain lack of courtesy and respect for distinguished fellow-labourers, speaks of himself as the inventor of the new doctrine and practice. It is probable that Dr. Brehmer never heard of Archibald Smith, but it is the more necessary to insist that the observations made by the latter, so long ago as 1840, on the hygienic effects of residence in the Andine valleys, 8,000 to 10,000 feet above the seaboard, were the starting-point of the doctrines which Brehmer claims as his own. And the importance of Smith's researches rests on this, that they are an eye-witness's faithful record of the results of an ancient treat-

ment long established in Peru, and based on empiric observations on so enormous a scale as to leave no room for doubt in the mind of any intelligent resident in the country. The Peruvians possess unrivalled opportunities for testing the value of high-level residences in phthisis; for on the one hand the disease is very common in their lowlands, and, on the other, the slopes of the Andes afford a variety of sheltered valleys at great elevations, in which the invalid can obtain all the effects of their dry mountain air, without too much wind. The results, it would appear, are most striking, not merely as regards the improvement of general health, but specially as to the liability to *hæmorrhage*.[1] The latter observation, in particular, is a severe rebuke to the theorizing way in which the climatology of phthisis has been mainly dealt with in Europe, since it is exactly opposed to the generally received ideas; and it is of such importance, that we hasten to add that the testimony of all the recent observers of the effects of high-level health-resorts unanimously confirms it.

In a later paper,[2] Smith states that in the whole of Peru, with its vast range of climate, phthisis is nowhere more prevalent than "in the mild and equable temperature of the capital and its immediate environs," while it is little known in the mountain regions except as imported from the coast. "In the warmer valleys of the centre of the Andes the health of the consumptive invalid is not restored. In hæmoptysis, which is the usual forerunner of consumption in Lima, the invalids themselves rarely trust to medicine, but at once order the mules . . . and they seek at the first notice of the disease to insure a full reparation of the injured respiratory organs, by an adequate continuance in the well-known and appropriated regions of convalescence." When the disease has further advanced and has produced perceptible deviation from the normal murmur, with almost always obscurity of sound on percussion under either the right or left clavicle, "no Lima junta of experienced native or well-acclimatised English physicians would for a moment hesitate to order the patient to the Sierra. They would deem this transfer of climate as the only security for the patient." In the same paper, Smith states that he has seen much good result, even in the advanced stages of phthisis, from removal to elevated regions; but he does not expect a perfect cure in such cases. "It must be clearly understood, therefore," he says, "that I claim the curative effects of the Andine climate, on the broadest ground of facts and experience, in favor of the early stages only, and not the more advanced periods of consumption, where there is, correctly speaking, no sound lung to rescue."

Among the places approved in Peru for the treatment of

1 *Edinburgh Medical and Surgical Journal*, vol. liv. 1840.
2 *British and Foreign Medical Review*, vol. xviii. 1856, p. 479.

phthisis, Archibald Smith mentions Harawag and Canta on the route from Lima to Pasco; "but Canta above all, on this route, is allowed to be the most desirable, being about 25 leagues from Lima, and at an elevation of 10,000 feet." He further names "on the Zarma road from Lima," and also on the Pacific slope of the Cordilleras, Mantanca and San Mateo; the former (according to M'Lean) 8,026, the latter 10,984 feet high. On the opposite slope of the Cordilleras, Zarma and Janja are the places recommended by the Lima physicians, and the latter (above 10,000 feet) is allowed to have the preference.

The position of the question, as brought out by A. Smith, is still more strikingly shown in another paper. "In further evidence of the importance attached to the climate of Janja by the physicians, Government, and inhabitants of Lima, and the coasts of Peru in general, I shall here briefly refer to the 'Estadistica General,' or general statistics of the capital, as published by Dr. A. Fuentes, of Lima, in 1858. He says on this subject, 'Janja has always been the refuge of the consumptive people, and a lengthened experience has demonstrated the favourable results of its climate. Nevertheless,' he observes, 'many are disappointed of the benefits they expected from Janja, because they do not leave Lima for that district until in the last stage of pulmonary decay; or because they do not remain in Janja the time required by nature to ensure a perfect recovery; or because, after visiting this sanitarium, instead of following a methodic life, suited to their state of disease, they abuse the advantages of the climate by the very help of the relief they derive from it, and commit excesses which can only lead to their premature death.' But the important result, notwithstanding such instances of irregularity, is, as told by Dr. Fuentes, that the proportion between the *cured* and the total number of patients, in all stages of pulmonary consumption, sent to Janja, amounts to $79\frac{4}{8}\frac{2}{3}$ per cent. And in view of so important a general result to the patients from the capital, where the Indian soldier is singularly prone to phthisis—a disease almost unknown in his native hills—the Government have of late years, in 1860, initiated a military hospital for consumptive patients from the coast, and capital in particular, in the vale of Janja." ("Climate of the Swiss Alps and Peruvian Andes compared:" *Dublin Quarterly Journal*, May 1866.)

What has been shown us for Peru by the researches of Smith has been proved also for Mexico by Jourdanet, who informed the world that a prolonged residence on the plateau of Mexico exercises not only a prophylactic but also a curative influence on pthhisis. ("La Mexique et l'Amérique tropicale," &c. Paris, 1864, pp. 204 *et seq.*) And Guilbert has done the same for Bolivia, as well as for Peru ("De la Phthisie pulmonaire dans

ses Rapports avec l'Altitude et avec les Races en Pérou et en Bolivie." Paris, 1862), and by Scrivener for the mountains of Cordova ("Sanitary Character of the Andine Heights," being a reprint, in private circulation, from an article by Dr. Scrivener in the *Revista de Buenos Ayres*).

Such and so strong being the evidence as far as regards the influence of elevated health-resorts in Central and South America, it is immensely interesting to observe the positive evidence of a confirmatory nature which has been brought forward of late years from the experience of mountain climates in Europe. Lombard, H. Weber, and Spengler all assure us that the natives of the Engadine and the Davos, when attacked by consumption during a residence abroad, are cured by a timely return to their mountain homes. And it would be easy to adduce a great deal more testimony to the same effect if we desired now to finally adjudicate upon the question—which is the best kind of climate for phthisical patients? At present, however, we only wish to point attention to the extraordinary apathy of the greater part of the medical profession to one of the strongest *primâ facie* cases, at least, that was ever adduced for a new method of treatment. We shall have more to say on this point hereafter; at present we shall only dwell on the following, which are the most obvious of the reasons why the high-level climates are not even experimented upon by the great mass of practitioners.

1. *A mild and equable climate* is widely regarded, from tradition, and from some of the superficial features of the disease, as the best for consumption. This idea has firmly laid hold of our minds; and yet, where are the warm and equable climates to which consumption is a stranger? The fact is, rather, that warm and equable climates, especially if they are at the same time moist, are the greatest hotbeds of consumption; not only is it a frequent disease in such places, but it is much more rapidly fatal than in colder climates with great changes of temperature.

2. *Cold*, i.e. low temperature, is by many persons considered as predisposing to consumption: but there are no facts to support the view that *cold in itself*, without moisture and wind, is a cause of consumptive diseases; we possess, on the contrary, much evidence that a cold and pure air counteracts the tendency to phthisis.

3. *Great variations of temperature*, as they generally exist in mountain regions, have the reputation of being specially deleterious to consumptive persons. But the fact is, explain it as we may, that most of the climates in which phthisis does not exist are characterized by great ranges of temperature: this is true not only of the mountain climates proper, but of the steppes of Orenburg; and Archibald Smith adduces over-

whelming evidence of the same fact from his experience of various localities in Peru.

4. The *diminished atmospheric pressure* in high elevations has always been popularly believed to predispose to hæmoptysis, and even Lombard supports this view ("Les Climats de Montagnes," 2d edit. 1858). Nor is it all surprising that such an opinion should have become current, considering the remarkable sensations which are experienced by the inhabitants of low countries on first ascending into mountain air. But if we investigate the reliable medical evidence, we find it altogether the other way, as we have already remarked.

5. It is the general opinion that *open-air exercise* is essential for the cure of phthisis, and that the rigour of the colder months in mountain districts prevents it from being safely taken, and thus leads to confinement in close rooms, under penalty of catarrhal and inflammatory attacks if the precaution be neglected. Among the authors whose works are placed at the head of this article, Brehmer seems as yet not to have kept his patients in his elevated health-resort during the winter, though he contemplates doing so in future; but H. Weber has already sent a considerable number to the Alps during winter, and Spengler has for several years been in constant attendance on consumptive patients at Davos: from both these authors we learn that these patients have been in the open air almost every day; that they have taken drives in sledges on the coldest winter days—the heat in the sun being very considerable; that they have also been able on many days to sit for hours in balconies on the sunny side of the house; and that they *have rarely felt cold, either indoors or out.* Most of H. Weber's patients have even slept with a window partly open during the coldest nights, and he mentions that those of his patients who had spent some winters in warmer places (Egypt, Algiers, the Riviera) and some in colder elevated regions, had been invariably more free from catarrhal and other fresh affections in the cold than in the warmer climates. On the question of exercise strictly so called, *i.e.* muscular exertion, we shall have some remarks to make at a later stage.

6. A far better grounded objection to the high-level health-resorts for consumption than any yet mentioned is the *want of accommodation* and of proper food at these places, especially during winter. The winter accommodation in the Engadine and at Davos is already much improved, however; and the food, though it might be better, is tolerable; moreover, if the demand were increased, good winter establishments would soon be set up in several parts of the Swiss, Italian, and French Alps, as also in Germany: and the social wants of the invalid would also thus be satisfied; though we would protest against the craving

for the dissipation of parties, &c., and for attending divine service in cold and draughty churches. For the inhabitants of America an abundance of high-level health-resorts can be found among the Andine heights of Peru, Bolivia, New Granada, and the Argentine Confederation, and on the plateau of Mexico. For Indians there must be numbers of suitable localities in the Himalaya range. And besides these localities we may mention the city of Erzeroum, in Asia Minor, and the table-lands of South Africa and of Abyssinia.

Thus far, then, it would appear that the objections urged against the adoption of high-level health-resorts for consumption are more theoretical than practical; and that they offer no serious obstacle which might not, probably, be entirely overcome. It is now our duty to inquire a little into the *modus operandi* of the curative influence; and this, to say the truth, is not very easily explained.

Brehmer, it is true, has a complete theory, which may be thus summed up: In persons predisposed to consumption there is a *habitus phthisicus;* this is characterised by a long chest and long lung, with a small flaccid heart. This small heart is unable to supply the abnormally large lungs with sufficient blood; the lungs are thus ill-nourished, half-starved; low kinds of inflammation (catarrhal pneumonia) are apt to occur in them; the products of these inflammations are frequently not absorbed, but undergo cheesy transformation and lead to the usual changes of phthisis. The physiological effect of elevated regions is an increased frequency and strength of the heart's contractions, increased tissue changes, an improved nutrition of the muscular systems of the heart and of the lungs; and thus we possess in them an antidote against consumption.

Now, on examining this theory, we remark: 1. The pre-existence of the phthisical conformation requires stricter proofs. The natives of the Peruvian Andes, who, according to Smith, became consumptive while serving in the army at Lima and other towns of the coast, have probably been originally well-formed; the inhabitants of Davos, who had become consumptive while residing in different towns in Europe, had, as Spengler assures us, well-built chests before they left their elevated valley; the two first cases reported by H. Weber were in perfect health when they left their mountain homes, but the condition of their lungs and hearts, and their entire nutrition, had probably changed after a prolonged stay under unfavourable influences in London. Is not, one may ask, in these and many other cases, the *habitus phthisicus* the effect of a general change in the nutrition, and of the altered respiratory action? and does not this change also give rise to catarrhal inflammations and their products?

2. It is true that an increased frequency of the heart's con-

tractions is one of the physiological effects of elevated regions, at all events in most cases and at first; but Brehmer has not proved that it continues after the constitution has become somewhat accustomed to the new climate, and our inquiries lead us to doubt this. From good evidence we are inclined to infer that the inhabitants of mountain valleys do not have a more frequent pulse than those of lower regions. Brehmer ascribes the increased frequency to diminished pressure of the air, and says that his own pulse, even in the same locality, always quickens with a lowered barometrical pressure. Can we form an inference from one case? If the diminished pressure of the air had much to do with the cure of consumption in elevated regions, then one would think that a certain rate of elevation, corresponding to a certain diminution of atmospheric pressure, would be sufficient in all localities; but this is by no means the case. Brehmer himself agrees on this point with Lombard, H. Weber, Küchenmeister, and others, that the elevation necessary, in different regions, to produce a certain immunity, varies greatly; that in the neighbourhood of the equator it requires over 10,000 feet, while in the middle of Germany 1,500 feet seem to be enough. If we look at the map we find, in those regions where the elevation necessary is very great, high mountains with vegetation, and sometimes cultivation ascending to a great altitude; while in those regions where 1,500 feet is sufficient for immunity there are no mountains exceeding 4,000 feet in height, and the fertility of the soil and the habitations of man cease at a much lower level than that. Without committing ourselves to a theory, it is not unreasonable to fancy that the air at such relative elevations is freer from foreign admixtures of organic and inorganic nature; and in some health-resorts this advantage would be more prominent during the cold months, when the ground is entirely covered with snow, a circumstance which would partly explain why most of the patients in the Engadine feel themselves better in winter than in summer. Possibly the remarkable fact discovered by Bowditch and by Buchanan bears a similar explanation, and favours the view just expressed. As the air in relatively high localities is less charged with products of decomposition, so probably the drying of the soil diminishes the amount of decomposition going on in the surface soil, and diminishes in this way the amount of the products of decomposition contained in the air of houses and places situated on such soil; and it is not unlikely that an air comparatively free from foreign —especially organic—impurity does not favour the occurrence of those catarrhal and inflammatory processes which so often lead to phthisis. Upon the theory thus suggested, we might understand why some not very elevated health-resorts possess immunity from phthisis.

Another physiological effect attributed by Brehmer and Spengler to the air of elevated regions is *increase of tissue change*. Without denying this we must agree with H. Weber that no satisfactory evidence has, so far, been given to the fact. Nobody, to our knowledge, has shown that more carbonic acid is exhaled, or more nitrogenous matters excreted; no one has even proved that the respirations are deeper or more frequent, or that more air is inhaled. It is most desirable that accurate investigations should be made on these points; as yet there are none in existence. If no larger quantity of air were inhaled in high regions, then, of course, the quantity of oxygen inhaled would be less than in low countries with a denser atmosphere; and the question would arise, whether high elevations may not act by diminishing the work of the diseased lungs. We may mention here, that some patients who have resided in high situations, for their health, have assured their medical attendants that after the first week the appetite for food diminished, and remained lower, although they had no distaste for their meals; and that in spite of diminished ingestion they gained weight.

And now, having stated as succinctly as we could the state of our information about the new climatic treatment, we shall conclude this article with a brief restrospect of the progress made, on the whole, towards a clear idea of the best way of treating consumption. We promised, in commencing this article, to do our best to avoid any undue bias towards an exclusive method of treatment; and in fact any such exclusiveness would be, in our opinion, most unfortunate.

1. It seems difficult to doubt any longer that the circumstances, whatever they are, which prevail in certain mountain valleys offer a more complete immunity from phthisis to the natives, and a better chance of cure to phthisical visitors, than is afforded by any other mere climatic influence whatever. It also appears very doubtful whether the influence really is climatic merely, and quite certain that it, at any rate, is not regularly proportionate to the mere degree of elevation of the district.

2. It is nevertheless impossible to suppose that all the benefits which have been attributed to warm southern climates were imaginary; on the contrary there is scarcely a practitioner who has not seen the greatest benefits accrue from sending consumptive patients to climates which, compared with their own, may be called, on the whole, decidedly mild and equable. Note here, however, two points. With very few exceptions those climates which have been popularly associated with this idea are, in reality, both much less mild, and much less equable, than the majority either of patients or even of medical men are accustomed to think, until they have had personal experience.

And secondly, those who are in the habit of analysing results with care have often noted this singular fact—that patients who have returned from wintering at such places, where they had expected to be bathed in the luxury of the *ideal* "Italian" climate, complaining bitterly that they have been starved with cold, and really given evidence in some particulars of apparent increase of catarrhal mischief for the time, do nevertheless appear after a short interval to show the unmistakeable influence of their winter sojourn, unpleasant though it has proved to them.

3. A more important practical observation than any other, except that of the influence of elevated health-resorts, is the discovery of the extraordinary value of *long sea-voyages*, which, during the last few years, has been increasingly impressing itself on the medical mind. It is, perhaps, not too much to say, that we are now certain the voyage itself was the only really beneficial agent in the otherwise mistaken and disastrous practice of sending consumptives to Madeira.

4. The kind of alimentation and medication which alone are useful is now pretty well settled; the only question which remains open being the degree of development that may be given to the use of certain metallic tonics, especially arsenic, which seems to offer the good results of iron *plus* an unknown, but probably very valuable, influence on the nervous centres.

5. The question of the kind and amount of physical exercise to be enjoined or permitted offers serious difficulties; but it also, so we think, promises to shed indirect light on the general climatic question. It is, on the one hand, known that great benefits often result from the mere influence of the free use of open-air exercise, independent of temperature or the other features of climate. It is, on the other hand, loudly protested by some of the most experienced practitioners,[1] that nothing more frequently ruins a patient's chances of recovery than the incurrence of muscular fatigue. Now let us turn to the instance of long ship-voyages, a mode of treatment which is quite indisputably successful in a great number of cases—does it not strike the reader forcibly, on reflection, that one most important circumstance of ship-board life is its *lazy, effortless monotony*, giving nearly perfect *rest*, if one may say so, to both bodily and mental muscles? Now, the other grand feature of life on a ship is the *constant and copious inhalation of air free from organic impurity* and charged only with matters (especially, perhaps, chloride of sodium) which are directly beneficial to nutrition and general health. Does it not seem as if there were, after all, a common measure, discernible if not completely definable, to all the various plans of hygienic treatment for consumption which of late years have commanded any wide support from medical men? It appears to

[1] We may mention that Dr. Burslem of Bournemouth has particularly enforced this view, in conversation with us.

us that we may tabulate side by side the elements of equal success from either of two modes of treatment:

1	2
Prolonged residence in a high but fairly sheltered mountain valley.	A prolonged ocean voyage.
Free carriage exercise, little or no walking.	Free exposure on deck, only gentle and slight walking exercise.
With, of course, all proper precautions about warm clothing, and the avoidance of draughts indoors.	Same precautions about sufficient clothing, and avoidance of draughts, getting chilled with wet clothes, &c.

If this view be ultimately justified by larger experience, it will then, we think, be obvious that by either of these two plans we offer, in a regular and necessary manner, all those advantages which are only partially and in an uncertain and fluctuating way afforded by the fashionable health-resorts of which the Riviera may be taken as the type; and that there is no evidence that the latter really possess special advantages of their own. The copious inhalation of an air comparatively free from organic impurities very probably accounts for five-sixths of all the benefits received at such places; and to the pleasing novelty of a foreign residence we should be inclined to attribute the rest.

Dr. Tanner's Clinical Medicine. Second Edition, revised and enlarged. By TILBURY FOX, M.D. Lond., Physician to the Skin Department of University College Hospital. London: Renshaw, 1869.

IT does not properly fall within the province of this journal to review works like the above, since therapeutics are not included in it. But we cannot refrain from saying a good word or two for a book which is well calculated to help the student in laying that foundation of sound clinical knowledge and diagnostic skill without which all his attempts at therapeutical experiment and observation will be useless. The first edition has been for some time out of print, and the author has done well to engage the assistance of Dr. Tilbury Fox in making the new edition an adequate representative of the present resources of clinical diagnosis. That gentleman has carried out the task with great energy and ability, and has made very important additions to the information contained in the original volume. Altogether, the result is a handbook which the student who is beginning to attend hospital practice cannot too soon purchase and diligently read, but which will also be found very serviceable to the qualified practitioner.

Clinic of the Month.

Treatment of Scarlet Fever.—In a sensible paper on scarlet fever, by Walter Fergus, the following remarks, in a somewhat less condensed form, occur. Medicines easily become poisons in scarlet fever; a smart purge or a repeated emetic not unfrequently changes a moderate and regular attack into one of peril, increasing the danger of all the symptoms. Next to a good supply of air and a comfortable bed, quietness is of the utmost consequence; a fussy nurse, or over-anxious parents, turn the scale against the patient with unerring certainty. An emetic of sulphate of zinc and ipecacuanha wine in the *earliest* stage of the disease is of use, helping, as it generally does, reaction; but it should not be repeated with a view of cutting short a disease which will run its course. If the patient can be kept alive for from seven to nine days, he will most probably make a good recovery. After the emetic the patient should be allowed to sleep as much as possible; the more he sleeps on the first two or three days of the attack, the better. Two remedies have proved almost equally useful. Chlorine gas in a sweetened solution is most grateful to the patient, and evidently helps him in his battle; but a better medicine is the liquor of acetate of ammonia, with a considerable excess of carbonate of ammonia, with ten minims of spirit of nitric ether in each dose. It should be given in doses repeated with greater frequency in severe cases. Gargles are useful in cooling and relieving the throat; a weak solution of chlorine gas sweetened, or of Condy's fluid, answers well as a gargle. It is a good practice to make a patient gargle before taking food or medicine. Nitrate of silver or strong hydrochloric acid must be used if there is much blocking up of the fauces, or grey patches on their surface. Ice is of immense use where there is either great throat affection or sickness. The pleasantest drink is soda-water given freely, with wine added when required. The disease seems to produce a stretching or distension of all the soft structures, and the treatment should therefore be directed to the restoration of the tone of these structures. With this view, iron and quinine may be given early. From the fifth or sixth day, six grains of the sulphate of iron, magnesia, and quinine, should be given *with* the ammonia draught, and this mixture may be continued till convalescence

is complete. The external treatment is of great importance; rapid sponging with vinegar and water is called for if the patient do not sleep, or if there is much irritation of the skin. In cases with extreme development of the rash and burning skin, the cold douche, rapidly given, acts like a charm. The patient, placed in a sponging bath close to the bed, has four or five wash-hand basins of cold water poured in quick succession over him, is quickly rubbed dry and put to bed, when, if the treatment has done good, he drops off to sleep almost at once. In the early stages warm baths do harm, nor should they be used until a certain amount of restoration of tone has taken place. Anointing the patient with fatty substances early in the disease is not likely to benefit the patient; it may arrest to a certain extent the diffusion of the separated cuticle. Scrubbing the skin with carbolic acid soap ought to be postponed to a late period of the disease. Before the restoration stage is reached, every exertion on the part of the patient should be avoided. Close stools near to the bed should be provided, and always kept charged with a disinfectant. A well-regulated and sufficient diet, with a change of air as soon as a removal is prudent, completes the recovery. Occupation, and especially mental occupation, must be cautiously resumed. Long after recovery the brain frequently shows signs of slow restoration of power. (See *Lancet*, Nov. 20.)

Treatment of Diabetes by means of Milk Diet.—Dr. A. Scott Donkin strongly advocates this mode of treatment, not only in cases of diabetes, but in Bright's disease, disease of the supra-renal capsules, &c., and considers it far preferable to the purely meat diet suggested by Home, and systematized by Rollo. He, however, considers it requisite that its employment should be persevered in, methodically and exclusively, until convalescence is established, otherwise the result will not be successful. He remarks that the rapidity with which milk acts is truly surprising, twenty-four hours being sufficient to effect marked improvement; the quantity and density of the urine suddenly fall, and *pari passu* with this change the thirst and voracious appetite disappear, the skin becomes moist and perspiring, while the symptoms referable to the nervous system are rapidly relieved; profound, refreshing sleep succeeds to the previously sleepless, restless condition, rendered almost intolerable by the incessant thirst. In one case now under his care, by milk diet, and without any other remedy whatever, the urine fell from 23 pints, specific gravity 1038·, to 9 pints, specific gravity 1040·, in twenty-four hours; and to 6 pints, specific gravity 1038·, at the end of the third day of treatment. In other words, there was a diminution of 14 pints of urine, and about 193 grains of sugar, in

twenty-four hours; and of 17 pints, and almost 243 grains of sugar, in three days. He attributes these advantages to the circumstance that the caseine of milk, being a primitive albumen, is infinitely superior as an agent of nutrition to the albumen of muscle, which has been highly and specially organized to perform an important vital function. Besides, the sugar which milk contains is quite inocuous in the disease (as shown by his experiments), and it supplies the system with a saccharine proximate alimentary principle equivalent to such as is afforded by vegetable food. (See *Lancet*, Nov. 27, 1869.)

Hypodermic Injection of the Salts of Mercury.—Dr. T. J. Walker records the results of his experiments on the curative effects of the hypodermic injection of corrosive sublimate on syphilis, a mode of treatment to which attention has already been called in these pages. In ten cases in which it was fairly tried he found there was immediate improvement after one or two injections. In the first case, after three weeks of treatment, and the injection of only seven-tenths of a grain of bichloride of mercury, the change in the condition of the patient was surprising; and although, unfortunately, the patient was prevented by her leaving the neighbourhood from following up the treatment, when last seen, though not perfectly cured, she was in a very much better state of health. In Case 2 those symptoms which were rather of the secondary type were all relieved after six injections, and the tertiary symptoms yielded with unusual rapidity to the iodide of potassium, when it was commenced. Dr. Walker states, his further experience leads him to the conclusion (which our knowledge of the action of mercury, administered in the ordinary way, would lead one to suppose), that in tertiary syphilis, whether affecting the bones or the skin and connective tissues, the hypodermic injection of the salts of mercury can in no degree take the place of the iodide of potassium. In Case 6 the very rapid and decided change in the appearance of the iris, after three doses of a tenth of a grain of the bichloride had been injected, was most remarkable. The strength of the solution injected amounted to one-thirtieth of a grain of the bichloride dissolved in ten drops of water and glycerine. Such solution may be used every day. Dr. Walker states that the pain and inflammation at the seat of puncture are comparatively slight, and considers the results he has obtained justify its trial in large institutions. (See *British Medical Journal*, Dec. 4, 1869.)

Treatment of Pustular Conjunctivitis with Arsenic.—Dr. C. Ritchie, of Manchester, records a case in which this disease, associated with herpes zoster affecting the greater part of the left side of the head and trunk, was cured with two-drop doses of liquor arsenicalis with quinine and iron, three times a day,

after regulating the bowels, generous diet, plenty of open air, exercise and weak alum collyrium. Under this treatment the cutaneous eruption rapidly disappeared, and simultaneously the eye got well. Dr. Ritchie remarks that this case supports the theory of Stellwag von Carion as to the origin of phlyctenular opthalmia, which he considers to be an herpetic eruption of the cornea and conjunctiva, in fact a neurosis of the ciliary nerves. (See *British Medical Journal*, Dec. 4, 1869.)

Tetanus Nascentium treated with Alcoholic Extract of Calabar Bean.—The patient, a large, strong, and healthy-looking female child, was born Sept. 8, 1869. It went on well till Sept. 12, when it began to fret and refused to be nursed, and at 6 P.M. had a spasm. The jaws were stiff, with the mouth full of froth; the masseters rigid, forearms flexed, and thumbs drawn across the palm. Respiration and pulse very rapid. A twelfth of a grain of the extract was administered at first, but the spasm becoming more frequent and severe, one-eighth of a grain was administered every half hour, and subsequently every ten minutes, but the patient ultimately died. Dr. Sherard, under whose care the child was, states that though no benefit was here observed, he should still feel inclined to try it again in a similar case, as Dr. Monti cured three out of four cases, and Dr. Watson reports two cases of traumatic tetanus cured by its use. If employed, Dr. Watson reports that its effects are very short-lived, and the doses must be frequently repeated to keep up its effects. (See *New York Medical Journal*, Nov., 1869.)

Therapeutics of Cutaneous Diseases.—Dr. M'Call Anderson, in the first of his Lectures on Diseases of the Skin, calls attention to various points in the therapeutics of these diseases. He is of opinion that there need be little dread of danger to the system at large from "driving in" an eruption, except perhaps in the case of eruptive fevers. He observes that in Germany, and especially in Vienna, local treatment is principally relied upon, while in England constitutional treatment appears to be too exclusively resorted to. He dwells on the point that local applications have not a merely local action, but that they are absorbed and often react on the system at large—a fact that is admitted and acted upon in the case of mercury, but is not less certain in some other cases, as in that of tar, which often produces nausea, vomiting, and diarrhœa. He notes also that local applications are, from various causes, far from uniform in their action. When scales or crusts are present they should be removed, both for the sake of diagnosis and to facilitate the action of local remedies, and their removal may be accomplished by thoroughly soaking them with almond oil and subsequent application of warm water, or by the agency of a poultice of crumb of bread

and hot almond oil, or in psoriasis by means of potash applications. Where acute inflammation is present, local applications should be dispensed with, or should be of a soothing nature. In tinea sycosis, however, the hairs should be extracted. He finds hydropathic treatment beneficial, especially in cases of either acute or chronic general psoriasis, and the shower-bath sometimes yields good results. Hard or sea water should, as a general rule, be avoided in the treatment of cutaneous affections. The best absorbent powders to be used in cases of acute inflammation, such as erysipelas or shingles; and also where there is a tendency to moisture, and it is desirable to keep the parts dry, are powdered starch, oxide of zinc, lycopodium, talc, and the carbonates of magnesia and zinc: when burning heat or itching is complained of, a little camphor may be added. Amongst the ointments the best are the benzoated oxide of zinc, which is much improved by the addition of two drachms of spirit of camphor to each ounce of the ointment. Another very soothing ointment is one containing bismuth, as in the following mixture:—Subnitrate of bismuth, ʒ ss; simple ointment, ʒ vj; oil of roses, ½ a minim. Soothing lotions are sometimes of service for the relief of uneasiness; indeed they are not unfrequently curative in cases of acute eczema impetiginodes of the face, for example. Those containing lead and soda are amongst the best, and may be used in the following forms:—(*a*) Solution of subacetate of lead, ʒ j; glycerine, ʒ iv; distilled water, ℥ vj: (*b*) dilute hydrocyanic acid, ʒ ij; bicarbonate of soda, ʒ j; glycerine, ʒ iv; rose water, ℥ vss. The parts should be frequently sponged with these lotions, or pieces of clean rag dipped in them may be kept constantly applied. (See *Lancet*, Nov. 20, 1869.)

Treatment of Constitutional Syphilis.—Dr. Lebert states he now applies courses of inunction for constitutional syphilis much more frequently than formerly, and uses with relatively less frequency the courses with pills containing sublimate or protoxide of mercury, which act very slowly, disturb digestion, and, after long continuance, produce in the mouth disagreeable after-effects, no longer of a syphilitic nature, which molest the patient, and in spite of all assurances make him uneasy. Salivation produced by any mode is injurious, and is therefore to be avoided. The syphilitic patient is anæmic, and his nutrition is impaired. Low diet and hunger, therefore, do not act beneficially, but have an injurious effect. Long seclusion in a small room at a high temperature adds to the disease the sickening effects of confinement. M. Lebert states that the average quantity of blue ointment to be used daily is half a drachm, and he often obtains a very good effect in inveterate cases from administering the iodide of potassium in addition. (See *Medical Times and Gazette*, Nov. 20, 1869.)

Cases Simulating Venereal Disease.—An interesting paper has been written by Dr. J. Waring Curran on this subject, giving an account of two cases of esthiomene, showing the importance of searching and particular inquiry into the general history and precise phenomena of the complaint, in order to arrive at an accurate diagnosis. In one of the cases, a lady, accompanied by her husband, came to seek advice for some intractable ulcers about the genitals. Two practitioners had previously pronounced the disease to be syphilitic, and had treated it with mercury. Very naturally she had accused her husband of infecting her, and they consequently lived very unhappily together. The patient appeared to be a woman of relaxed habit of body and scrofulously cachectic. Upon the retirement of the husband—a most respectable and respected member of society, who declared emphatically that he never, at any period of his life, suffered from venereal—Dr. Curran proceeded to examine the sores. Upon the left labium there existed a deep, corroding, glassy-like ulcer, somewhat oval in shape, about the size of a florin, one-third of which occupied the inside, and the remaining two-thirds was situated on the external surface of the *labium majus*. The edges of the ulcer were elevated, and indurated, and well formed; thick yellow pus exuded from the surface of the sore. Two small ulcers, of a strikingly chancrous character, were to be seen on the right labium, but quite in the shade when contrasted with that on the opposite side. They appeared what might result if the cutis vera and subcutaneous cellular tissues were punched out; and the parts surrounding, in truth the entire genitals, demonstrated a congested, infiltrated, and unhealthy appearance. The glands in the groin were slightly enlarged, there was a persistent leucorrhœa, the woman was five months *enceinte*, and secondaries had never manifested themselves. To satisfy himself that the ulcers were really syphilitic, for the surroundings of the case were against this view, no secondaries had appeared, and the sores were *in statue quo* for weeks, Dr. Curran took the husband into consultation, and proposed inoculation with matter from the sores, explaining, at the same moment, the precise nature of such a procedure. The promptness with which both acceded went far to convince him that the husband was not an erring party. Dr. Curran inoculated his patient in two places on the left thigh with matter obtained from the largest sore, and in two places on the right thigh with matter from each of the smaller ulcers, and then awaited the issue. The application of carbolic acid and glycerine was directed to the old ulcers, and that they should be frequently cleansed during the day by washing with alum water. Full doses of quinine and iron were prescribed, a nutritious regimen and method of living suggested, and she was advised to return in three days. The result was exceedingly

satisfactory. No inoculation occurred, and Dr. Curran felt himself justified in assuring both husband and patient that the complaint, although suspiciously situated, was not of a syphilitic character, and had thus the pleasure of reconciling them to one another. His opinion was subsequently verified by the following results:—1st. The smaller of the two sores on right labium healed over in ten days, the other in twenty-three days, and the deep corroding ulcer on left side, which presented a truly formidable appearance, in seven weeks. 2dly. No secondaries have ever manifested themselves. 3dly. At the full period the woman was delivered of a well-nourished child free from blemish. 4thly. The husband never became affected in any way. The only question that arises to our minds is as to how far the non-inoculation of the wife with the matter is conclusive as to the innocent character of the sores. (See *Medical Mirror*, Nov., 1869.)

As a therapeutic agent, hydrate of chloral is *the* sedative of violent pain in gout; of the atrocious sufferings occasioned by nephritic colic, and dental caries; in a word, it is the very best of anæsthetics administered through the stomach. Lastly, it is the quickest and most efficacious remedy in intense chorea, when it is required to abate speedily a condition of restlessness, which is in itself a peril to the life of the patient. (See *Lancet*, Nov. 20, 1869.)

Extracts from British and Foreign Journals.

On the Propriety of bandaging after Paturition, or when Ribs are Fractured.—Dr. Ryer remarks that the abdominal parietes towards the latter part of gestation are so distended in many instances as to be incapable of returning to their pristine condition. The abdominal viscera, by the act of delivery, lose the support to which they have become accustomed; and hence follow exhaustion, faintings, and even mania. The necessity of support and pressure to remedy this state of things has long been recognized, and very generally practised. But every cloth bandage that a recently delivered woman can support will work upwards from the hips to the waist, since the latter is smaller, and the bandage at once becomes ineffectual, if not injurious. But another objection to the bandaging is that it tends to depress the uterus; for if the finger be introduced into the vagina at the moment when strong traction is made upon the bandage eveloping the abdomen, the uterus may be felt to descend to a considerable extent; hence a bandage too tightly drawn, or too long worn, will encourage prolapse. A case of pendulous belly was treated with such success by Dr. Ryer, with adhesive strips instead of a bandage, that he has since frequently adopted the plan. The method of bandaging Dr. Ryer has practised is to take about three-fourths of a yard of the adhesive plaster and cut it in strips parallel with the warp, so that each strip is one and a half inches wide, and long enough to extend from three or four inches from the spine on one side, over the abdomen, to within three or four inches of the spine on the other side. Having cut the entire pieces into strips (say ten), and warmed them, he commences at the lower part by drawing the heated plaster from the back of the hips—where the assistant presses the end against the skin—tightly over and above the pubis, and around to the corresponding place on the opposite hip. Thus is applied each strip above the other, until we arrive at the umbilicus, in some cases one inch above; but too high bandaging is subject to some of the objections attached to the ordinary system. As adhesive plasters slip and stretch, they should be applied tightly drawn, gathering the looseness and folds of integuments under the plaster. These folds disappear within a few hours after bandaging. Having thus applied successive strips from below, upwards to the umbilicus, we commence again below, and over the first we apply a second layer of

adhesive strips. The object of this second layer of strips is to give body and firmness to the first, for the abdomen in its lower part requires all the support the most ingenious can give. Thus the inferior portion of the abdomen becomes incased by adhesive plaster, whilst the epigastric region is free, and the relief is often so great, when properly applied, that patients who have lain upon the bed one or two weeks, bandaged with cloth, will, upon the application of this casing of plaster, ask permission to sit up or to leave their beds. But there is one drawback to the use of the adhesive bandage; and that is, with some an itching occurs, about the fourth day. This itching passes away by removing the bandage, washing the parts with warm water, and immediately renewing the bandage by fresh adhesive strips, as at first. Similar to the usual manner of bandaging after labour is the bandaging by rollers and towels when the ribs are fractured. This cumbersome and unphilosophical wrapping around of the chest, by its heat and pressure, is more likely to produce internal disease than hasten the union of the fractured ribs. Disarranged, loosened, and displaced as soon as applied, they are ineffectual, except for evil. Without pressure upon the lungs the ribs can be held perfectly still by the judicious application of adhesive plaster, prepared as above mentioned, in strips of one and a half inches in width. Commencing at the sternum, apply the strips obliquely downwards and backwards on the side affected, to the lumbar region; having applied several of such strips, a second layer over the first may be used for the purpose of giving firmness. For the fracture of ribs upon one side it is not necessary to embarrass the opposite side with bandages, as is so often practised. From personal experience following the fracture of a rib, Dr. Ryer has satisfied himself that the ribs may be held quite as much at rest by the adhesive plaster drawn from the sternum to the lumbar region on the side affected, with the side not affected free from restraint, as they can be by the tightest roller. (*California Medical Gazette*, Nov., 1869.)

Dr. Dieulafoy's "Aspirateur Souscutane."—Under this name an instrument has been suggested by means of which effusions into synovial or serous membranes, collections of pus or blood, and even hydatid sacs, may be safely evacuated. It consists of an instrument resembling a subcutaneous injection syringe, with a terminal and a lateral tube fitted with stopcocks, to which a *capillary* trocar can be fitted, so that after withdrawal of the morbid liquid an injection may be practised without removing either the trocar or the pump. (*Med. Times and Gazette*, Nov. 20, 1869.)

Casati on the Employment of Buxin against Intermittents (*Gazz. Med. Ital. Lombard*, Nov. 30, 1869). The em-

ployment of sulphate of buxin has recently been recommended by Gaspare Pavia, a chemist, as a febrifuge, and has been tried by Dr. Casati. He experimented on forty-five patients, twenty male and twenty-five female, the ages varying from five to sixty years. The type of the fever was tertian in twenty-five cases, quotidian in ten, quartan in five, tertiana duplex in one, and four were anomalous. The result was satisfactory in thirty-six cases, but in eight unsatisfactory. In each of the latter only two doses of the salt were administered, the patient desiring that quinine might be employed. Of this, one dose removed the symptoms, showing that the buxin had modified the disease, and had it been longer persisted in would probably have effected a cure. The amount taken amounted to about 15 grains, which the patient took in six or eight powders, during the period of apyrexia. In one patient seven grains affected a cure, whilst in ten adults it was found requisite to repeat the dose in order to remove the attack. A relapse only occurred in two instances. Twenty of the thirty-six cures were immediate; in the remaining sixteen, one or two slight fits were subsequently observed. The salt did not in any instance produce any injurious effects, except perhaps in one, in which the second dose produced some faintness. All the intermittent cases treated were free from complications. Buxin acts like quinine and with the same energy in moderate cases, but in severe cases quinine is preferable. Buxin is in general to be preferred to quinine on account of its superior cheapness, and is especially to be recommended in those cases in which there is some idiosyncrasy on the part of the patient, rendering quinine an objectionable remedy. (*Wien Wochenblatt*, Oct. 13, 1869.)

Therapeutic Effects of Mechanical Vibratory Motion.—A paper containing the results of inquiries made on this subject has been published by Dr. Taylor, of New York, in the *Medical Journal* of that city. The inquiries were made on several hundreds of patients labouring under various kinds of maladies. Dr. Taylor regards vibration as a rapid wave-like motion, propagated in constant series through the soft yielding substance of the body, from a convenient external point. The action consists of a rapid displacement and replacement, and consequent alteration of the cells, fibres, and membranes that are in proximity, together with displacement of the fluid contents of these structures, and of the fluids in which they are bathed. He draws attention to the agreeable sensations and the remedial effects well known to be produced by friction, and contrasts this mode of producing motions of the deeper lying parts with that which he now introduces to the profession, of imparting a series of very light rapid strokes, directed perpendicularly upon some

portion of the body. Such strokes cannot be satisfactorily performed by the hand, as the operator soon becomes fatigued, and it consequently became requisite to invent some apparatus by which such strokes can be effected. After much research and numerous experiments Dr. Taylor has constructed a series of machines capable of the various uses hitherto found desirable. In one form of the instrument slight taps are made; in a second a rubbing movement; and in a third method, which is limited to the extremities, the limb is oscillated upon its axes with a short, quick, reciprocating movement. The degree of rapidity with which these vibratory movements may be applied generally ranges between one and two thousand vibratory acts per minute. The more rapid rate produces effects somewhat allied to those of a diffusive stimulant, except that it is more permanent, and is not followed by any sign of depression. The time during which any portion of the body may be subjected to vibratory action will depend on the pathology of the case. In paralysis the instrument may be used without stint, but in some forms of nervous affection it requires caution in its application. One of the most direct and conspicuous of the effects of vibration is an increase of temperature, not, however, rising above the natural standard, and sometimes followed by perspiration. This effect Dr. Taylor attributes to increased oxidation, occurring in the fluids and tissues. Vibration also causes elimination of waste products. It is an excellent revulsive. It removes capillary congestions, and finally it promotes absorption. (*New York Medical Journal*, Nov., 1869.)

Mrs. Winslow's Soothing Syrup.—A practitioner writes to the *California Medical Gazette* stating that having recently seen a child in state of narcosis, to whom no medicine except this soothing syrup had been administered, and this only to the extent of two teaspoonfuls in two hours, sent some of it for analysis to a skilful chemist. On examination, it was found that there was of morphia and other opium alkaloids very nearly one grain to the ounce of syrup. The printed directions are, "For a child under one month old, six to ten drops; three months old, half a teaspoonful; six months and upwards, one teaspoonful, three to four times a day till free from pain. In dysentery repeat the above dose every two hours, until the character of the discharge is changed for the better." So that here we have a dose of morphia equal to ten drops of laudanum given to a child of three months old every two hours, and double the quantity to a child of six months old! The specimen of soothing syrup analysed was made by Curtis and Perkins, of New York, who are the only manufacturers. It has been ascertained that there are about 100,000 two-ounce bottles sold

annually in San Francisco alone, containing therefore 180,000 grains of morphia, given annually to the babies in California. No wonder one-third of them die before they reach the age of two years. (*California Med. Gazette*, Nov. 1869.)

Antagonism of Morphia and Atropia.—A good example of the antagonism of these drugs is referred to in the *Medical Times and Gazette* for Nov. 20, as occurring in the practice of M. Béhier. In this case an old man took a solution of sulphate of atropia, prepared for ophthalmoscopic purposes, containing one-fifth of a grain. He experienced an acid taste in the throat, slight embarrassment in the movements of the tongue, muscular weakness, a difficulty in walking, soon amounting to impossibility, and disturbance of vision. M. Béhier knowing the antagonism of morphia and atropia (described by Gräfe in 1862), prescribed ten drops of laudanum every ten minutes. Each dose diminished the intensity of the symptoms. The patient took on the whole seventy-six drops—a dose which, if he had not previously taken the atropia, would have undoubtedly produced symptoms of poisoning by opium.

Treatment of Neuralgia by Electrization.—Drs. Rockwell and Beard in some observations on neuralgia state, as the result of their experience, that neuralgia in all its varied forms—constitutional, centric, peripheric, and reflex—is susceptible of relief by the method of electrization, either general or localized. They agree with ourselves in thinking that various circumstances render it probable that many cases of neuralgia depend on atrophy, or a tendency to it, in the posterior roots of the affected nerve, or of some portion of the grey matter of the central nervous system. They contend, however, that this can by no means be accepted as a general law, being disproved, in their opinion, by the many neuralgias that occur from merely local causes, such as pressure, ulceration, &c., in constitutions where no hereditary tendency to nervous conditions exists, and before the injury to the nerve itself could possibly impair the vitality of any portion of the grey matter of the nervous centres. They have found, as a rule, that the neuralgic pains of locomotor ataxy are very decidedly relieved by electrization in some form. The pains accompanying spinal congestion are also frequently ameliorated by the same method of treatment. In ataxy the descending faradaic current has generally succeeded, but they have recently had a case in which the faradaic current proved ineffectual, whilst immediate benefit was experienced from the first application of the galvanic current from thirty-two cells of Stöhrer's battery. In regard to peripheric neuralgia, or that form in which the cause is supposed to be seated not only external to the nervous

centres, but also in some portion of the very nerve affected—amongst such causes may be enumerated neuritis, or perhaps more frequently inflammation of the neurilemma or sheath of the nerve, neuroma, continued action of cold, debility or excessive fatigue—mild cases of such disease readily yield to treatment, or recover spontaneously. Others, of a more severe and persistent type, are frequently met with, but are successfully treated by the internal administration of quinine, valerianate of zinc, colchicum, &c., as well as by a variety of local applications. Not unfrequently, however, all the ordinary internal remedies and external appliances prove unavailing. It is in such instances, well illustrated by the following case, that electrization is frequently followed by admirable results. Mr. M——, aged 65, a man who had enjoyed most excellent health all his life, stated that he had suffered acutely and almost constantly during the day from a persistent and aggravated form of facial neuralgia. When in perfect repose, as in the night after retiring, he suffered but little and slept soundly; but whenever he attempted to converse or to eat, or in any way to use his jaw, a sharp shooting pain of a most intense character, and attended by an increased flow of saliva, was excited along the course of the fifth pair. *The action of the direct rays of the sun invariably produced the same result.* Some four years previously, while at dinner, he first felt an acute pricking pain under the ear. These attacks annoyed him occasionally, but in the course of twelve months they became more frequent and severe, and for the last two and a half years he had suffered as stated above. The first application of the faradaic current gave him immediate relief. The paroxysms of pain were excited less readily, were less severe, and not so prolonged. He continued to improve under the influence of three more applications, but in order to hasten the cure, an inverse galvanic current, from eight cells of Stöhrer's battery, was substituted. The effect was temporarily disastrous. The paroxysms of pain returned with all their former severity. Fortunately, however, a few gentle applications of the faradaic current repaired the evil produced in this case by the galvanic, and *in less than six weeks* from the commencement of treatment, and after having received fifteen applications, he had so far recovered as to be unconscious of pain during the ordinary efforts of talking and eating. No relapse has occurred during the six months since treatment was discontinued. Lastly, as regards reflex neuralgia, they believe there is no question that electrization may frequently prove of service by its power of allaying local irritation, and giving tone to relaxed parts, though of course cases referrible to carious teeth, uterine disease, &c., must receive appropriate treatment directed to those conditions. (*New York Medical Record*, Nov. 1, 1869:)

Notes and Queries.[1]

The Action of Small Doses of Ipecacuanha.—It may save some trouble to intending correspondents if we define a little more accurately the kind of evidence on this subject which we desire to collect. With every wish to be courteous and fair, we must decline to receive statements about the action of infinitesimal doses. Life is short, and the space of our journal is limited; we really cannot, therefore, recommence a controversy which is only kept open by gentlemen who decline to be guided by the ordinary principles of evidence accepted by men of science, whether medical or any other. The question before us is a totally different one:—What is the effect of administering a quantity of ipecacuanha, not inferior, or only slightly inferior, in total amount to the doses recommended in the class-books, but divided into minute portions which are administered with great frequency? Is it or is it not the fact, that such a mode of administration, such a *gradual* impregnation of the blood with the remedy, produces simply *toning* effects upon the sympathetic and the visceral branches of the par vagum; arresting vomiting in one direction, congestion of bronchial and alimentary mucous membrane in another, and excessive secretion in a third? To any one not prejudiced by a foregone conclusion we think it will be evident that this is an entirely new question, and has no relation whatever to the old dispute between the homœopathists and the (for the most part imaginary) allopathists.—Ed. Practitioner.

On this subject Mr. R. Colquhoun writes to us as follows:—"In a note to Dr. Phillips's article this month, you call for further evidence as to the power of small doses of ipecacuanha in controlling vomiting. As a slight contribution to that evidence, perhaps you may deem the following case worthy of notice. On 6th November I was asked to see a Mrs. S——, who was stated

[1] The Editor, being desirous of making this department a useful medium of communication between practitioners, will be glad to receive short notes on theoretical or practical points in therapeutics,—brief jottings on those numerous queries which suggest themselves from time to time to a medical man as he "goes his rounds," but which he has neither the time nor, in some cases, the opportunity of answering. The Editor does not pledge himself to reply to every question addressed to him, but he hopes to make the "department" the means of supplying the information required; and this he can only effect by the hearty assistance of his readers.

to have been suffering from severe and uncontrollable vomiting for some months past. Patient is thirty-five years of age—bilious temperament—three months advanced in pregnancy—is much emaciated—tongue very foul, and mouth filled with thick, viscid mucus, which she constantly keeps spitting. States that she has been suffering from vomiting for over two months—is daily getting worse—vomits every half-hour, and can retain nothing on her stomach. Has had three children, and suffered for several months in a like manner during each of her previous pregnancies, but has never been so bad as she is on this occasion—could never get anything to do her good. 'Effervescing draughts—two table-spoonfuls every three hours,' &c., &c.—she has taken *ad nauseam* Ordered minim and half doses of vin. ipec. in water, to be taken frequently. 8th November: Find patient much improved—tongue cleaning—sickness not so troublesome. 15th November: Vomiting has entirely ceased—tongue clean—appetite good—was out of doors yesterday."

The Constant Current in Private Practice.—A correspondent, "R. W.," asks us whether any really effective, and at the same time portable, *constant current apparatus* is in existence. We think we may now venture to say, with some confidence, that the modified Smee's battery made by Weiss and Son will answer every purpose for which a private practitioner can require such an instrument. It is undoubtedly quite portable, and, so far as we can see, it affords all the medical electrician asks of the constant current in actual practice. We have had occasion during the last three months to test pretty severely its efficiency in the class of cases where, above all others, the special qualities of the constant current are wanted: viz. in the instance of paralysed and wasted muscles which have lost all sensibility to the interrupted current; and have found its action thoroughly satisfactory. The instrument is unfortunately (and necessarily) expensive to begin with, and will probably require repairing some five or six times annually, at the cost of a few shillings each time; but the expense and trouble will be well repaid if the battery proves to supply, as we think it will, a sufficiently reliable means of using the constant current in the houses and at the bedsides of patients.

Chloral in Alcoholism.—Mr. Blood, of St. Helier's, Jersey, sends us the following note:—"A case of alcoholism with insomnia, spectral illusions, and excitement of an aggravated character, has been under my care during the last week. All the usual hypnotic and sedative remedies which formerly subdued similar symptoms failed me quite. On this occasion I was fortunate in having procured lately some 'hydrate of chloral,' and determined on a trial of it as a hypnotic; accord-

ingly I ordered a drachm of the salt to be dissolved in six ounces of water with a little tincture of orange peel, and directed two ounces to be administered to my patient; and should sleep not be induced by the first dose, an ounce of the mixture to be given in two hours after. In about ten minutes after the first dose was given he fell into a profound sleep, which lasted for twelve hours; he awoke free from all the symptoms which had caused his family and myself so much anxiety. How grateful we should be for this invaluable hypnotic, and to Dr. Richardson all honour and praise for his researches and labour in directing us to the use of it." [In relation to chloral, we may state that we are personally engaged in a research which will be published in this journal when completed.—Ed. Practitioner.]

Dr. Marston's note on the subject of ipecacuanha, and on our remarks on the principles of homœopathy and allopathy arrived too late for insertion in the present number, as it is unusually long. It will be inserted and answered in our next issue. We shall here only repeat our decided and impartial objection to the principles both of homœopathy and of allopathy; adding that the latter is *not* the creed of any intelligent member of the so-called orthodox medical profession.

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[1] Any of the foreign works may be procured by application to Kelly, Piet & Co.

THE PRACTITIONER.

FEBRUARY, 1870.

Original Communications.

ON ATROPIA AS A PHYSIOLOGICAL ANTIDOTE TO THE POISONOUS ACTION OF PHYSOSTIGMA.

BY THOMAS R. FRASER M.D., F.R.S.E., F.R.C.P.E.

Assistant-Physician to the Royal Infirmary of Edinburgh.

The subject of the antagonism between various of the physiological actions of different active substances, or remedies, has recently become a prominent one in medical science. Numerous apparently well-authenticated examples have already been accumulated, among which may be instanced the antagonism between the actions of morphia and atropia, and of physostigma and atropia on the iris and on the minute blood-vessels; of morphia and quinine on the minute blood-vessels; and of physostigma and atropia, hydrocyanic acid and atropia, and muscaria and atropia on the vagi nerves.

Inseparably connected with this subject is the more ancient one of the antagonism between the lethal actions of active substances. We cannot, however, instance any certainly established example of physiological antagonism in this comprehensive form. It is familiarly known that many eminent authorities maintain that the lethal action of belladonna may be antagonized by opium, and, conversely, that of opium by belladonna. As long ago as the year 1570, Pena and De Jobel asserted that opium diminishes the activity of belladonna; some years afterwards, Horstius reported a case in which the

effects of a large dose of belladonna were apparently cured by the administration of opium; and recently many modern writers—as Benjamin Bell, Greves, Anderson, Garrod, Macnamara, Behier, Norris, and Constantine Paul—have published evidence which appears to favour the existence of this reputed antagonism. We are not, however, justified in regarding this evidence as conclusive, seeing that several observers of recognised ability have pronounced it to be insufficient, after a careful and strict examination of each recorded example. Further, the results obtained from experiments on the lower animals by Brown-Sequard, Camus, and Onimus, are directly opposed to the existence of this antagonism.

Within the last few months Professor Preyer, of Jena, has announced that atropia is a physiological antidote to prussic acid; and still more recently Drs. Schmiedeberg and Koppe, of Dorpat, have shown that there is good reason for supposing that the lethal effect of muscaria, an active principle derived from *Agaricus muscarius*, may be prevented by atropia. With the former researches I am but imperfectly acquainted, as I have not yet had the opportunity of consulting the author's paper; with the latter I am not inclined to be perfectly satisfied, as the authors have omitted to prove that the effects antagonized by atropia, were caused by doses of muscaria that would otherwise have certainly proved fatal. The experiments of the Russian investigators are, therefore, to some extent open to the objection so ably urged by Dr. John Harley and Lemaitre against many of the recorded cases of antagonism between opium and belladonna—viz., that a lethal quantity of the poison is not shown to have been administered.

The investigation, to some of the results of which I propose to draw attention in the present paper, was commenced in April 1868. Although yet unfinished, various facts have been obtained that seem of sufficient importance to warrant this publication; for they demonstrate that, in certain animals at least, the lethal action of physostigma may be prevented in a remarkable and perfect manner by the physiological action of atropia. With few exceptions, the experiments were performed on rabbits and dogs; but I shall refer chiefly to those on the

former animal, as with it the series of experiments is at present the most complete.

The following plan was adopted, as it appeared to be the one by which the most conclusive results were to be obtained:—After the minimum lethal dose of extract of physostigma had been approximately determined for rabbits and dogs of different weights, this dose, or one considerably greater, was administered *after*, *along with*, or *previous to*, a certain dose of sulphate of atropia; and if death did not result, the same animal was killed, some days subsequently, by a dose of extract of physostigma equal to or less than that given in the combination. This extract was prepared by myself with rectified spirit; and as it is somewhat hygroscopic, it was dried *in vacuo* in order to ensure an unvarying preparation, of which each dose was separately weighed in an absolutely dry state. The sulphate of atropia that I used was the ordinary commercial substance. The extract of physostigma, as well as the sulphate of atropia, were almost invariably administered by subcutaneous injection.

In the experiments in which sulphate of atropia was administered *before* a lethal dose of extract of physostigma, death did not occur when one grain of the extract was injected fifteen minutes and thirty seconds after half a grain of sulphate of atropia; when two grains of extract were injected fifteen minutes and fifteen seconds after one-tenth of a grain of sulphate of atropia; and when three grains of extract were injected fifteen minutes after half a grain of sulphate of atropia. The rabbits employed in each of these three experiments were respectively killed, several days afterwards, by seven-tenths of a grain, by one grain, and by one grain and a-half of extract of physostigma; and it is to be observed that each of these doses is considerably less than that from which the same animal recovered when sulphate of atropia had been previously administered.

In the next series of experiments the two substances were injected *simultaneously*, or almost so—an unavoidable interval of only a few seconds intervening between the two injections. It was found that death did not occur after half a grain of sulphate of atropia and one grain of extract of physostigma, after half a grain of sulphate of atropia and three grains of

extract of physostigma, and after six-tenths of a grain of sulphate of atropia and four grains of extract of physostigma. The rabbit employed in the first of these experiments received, thirteen days afterwards, one grain of extract of physostigma, and death occurred in eighteen minutes; the rabbit employed in the second experiment received, nine days aftewards, one grain and a-half of extract of physostigma, and death occurred in fifty-four minutes; and the rabbit employed in the third experiment received, seven days afterwards, one grain and a-half of extract of physostigma, and death occurred in thirty-six minutes.

These two series of experiments demonstrate, in the most rigid manner, that atropia, by its action on the living economy, counteracts or prevents the lethal action of physostigma. I have obtained results that are quite as satisfactory in establishing the existence of this antagonism by experiments on dogs also. One of these has already been described in a communication to the Royal Society of Edinburgh, from whose *Proceedings* I quote the following account of the experiment:—

"Eight grains of sulphate of atropia and three grains of extract of physostigma, in distilled water, were injected nearly simultaneously under the skin of a vigorous English terrier dog, weighing ten pounds. The chief symptoms were dilatation of the pupils, partial paralysis, and hypnotism. Of these the first continued for several days, and the last for less than twenty-four hours. The partial paralysis continued for only forty minutes, after which the dog was in a perfectly normal condition, except that the pupils were in full dilatation, and that a tendency to indulge in sleep was manifested.

"Three weeks afterwards the same dog received eight grains of sulphate of atropia and six grains of extract of physostigma —the latter being twice as large a dose as that given in the previous experiment. Dilatation of the pupils and considerable loss of motor power were again produced; but in addition certain symptoms were prominently exhibited that were undoubtedly due to the physostigma, such as tremors and exaggerated bronchial secretion. The partial paralysis and tremors continued for more than three hours, and the dilatation of the pupils for several days, after which the dog perfectly regained its former condition.

"In order to show distinctly that the atropia had prevented the fatal action of the physostigma given in these two experiments, this dog received, some weeks afterwards, three grains of extract of physostigma—a dose equal to that from which it recovered in the first experiment, and *only half* as large as that from which it recovered in the second. The results were, that partial paralysis and tremors were quickly produced, that the lachrymal and salivary secretions were profusely increased, and that the respirations became more and more laboured and jerking, until they ceased in death, at seventeen minutes after the administration."

The next step in this inquiry, and that by which the practical value of the above results can be most thoroughly tested, was to administer the antidote *after* a fatal dose of the poison. It is obviously of importance that the nature of the facts observed in these experiments should be clearly understood, and accordingly, I have thought it advisable to give a short account of two experiments of this kind.

In the first, a young rabbit, weighing two pounds and fourteen ounces, received, by subcutaneous injection, *one grain and a half of extract of physostigma*, suspended in fifteen minims of distilled water. Symptoms of physostigma action appeared in one minute and thirty seconds, but they did not assume a serious aspect until six minutes, when the rabbit had great difficulty in maintaining a sitting position. In nine minutes it fell, and rested on the abdomen, chest, and lower jaw, and the pupils were somewhat contracted. In ten minutes fæces were passed, and saliva escaped abundantly from the mouth, while the animal lay flaccidly, quite unable to move about.

At ten minutes and thirty seconds, half a grain of sulphate of atropia, dissolved in fifteen minims of distilled water, was injected under the skin at the left flank. No obvious result occurred until four minutes and thirty seconds, when the state of flaccidity somewhat disappeared, the back becoming normally curved, and within a few seconds the head was again raised, the flow of saliva considerably diminished, and the pupils slighted dilated. In eight minutes the rabbit succeeded in rising on its limbs, and sat in a natural posture; and now the exaggerated secretion of saliva was completely checked, and the pupils widely dilated.

In twelve minutes, the only symptoms present were extreme dilatation of the pupils, due to the action of sulphate of atropia, and constant fibrillary muscular twitches, which I have shown to be due to the action of physostigma.

Twelve days afterwards, *one grain and a fifth* of the same preparation of extract of physostigma was suspended in fifteen minims of distilled water, and injected under the skin of this rabbit. *Death occurred in thirty minutes.*

In the second experiment, *two grains of extract of physostigma*, suspended in twenty minims of distilled water, were injected under the skin at the right flank of a rabbit, weighing three pounds and eleven ounces and a half. In eight minutes and thirty seconds the rabbit was lying on the abdomen and chest, saliva was escaping abundantly from the mouth, the pupils were somewhat contracted, the respirations were laboured and noisy, and moist fæces were being copiously passed.

At eight minutes and thirty seconds, half a grain of sulphate of atropia, dissolved in fifteen minims of distilled water, was injected under the skin of the left flank. In four minutes afterwards the pupils were dilated, and the flow of saliva and passage of fæces had ceased. In six minutes vigorous efforts were made to rise, but these efforts were not successful until fifteen minutes. In about one hour and twenty minutes the rabbit was nearly well, though a slight degree of paralysis was still present. In one hour and forty minutes every symptom had disappeared, except dilatation of the pupils and fibrillary twitches of the muscles.

Four days afterwards this rabbit, while in a perfectly normal condition, received by subcutaneous injection *one grain and a half of extract of physostigma*, suspended in fifteen minims of distilled water. Tremors, paralysis, and great increase of the salivary and bronchial mucous secretions were quickly produced; moist fæces were by and by evacuated in profuse quantities; the pupils became contracted, and *death occurred fifteen minutes and thirty seconds after the administration.*

The experiments I have now mentioned do not in the least degree indicate the precise power of counteraction which atropia exerts against physostigma; before this can be determined, the number of the experiments must be greatly increased. It will,

however, be admitted, that they show that the lethal effects of doses of physostigma greatly in excess of the minimum fatal, may be prevented by doses of atropia greatly below the minimum fatal; and that they likewise contain a most perfect demonstration of the power of atropia to prevent the lethal effects of certain doses of physostigma. It may be said that such a demonstration, being made in the lower animals, does not admit of application to man. In reply I would urge that the actions of physostigma and atropia are precisely the same in man, and dogs, and rabbits. A marked difference undoubtedly exists between the susceptibility of man and of these animals to the action of atropia; but this difference being merely one of susceptibility, requires only that the quantity administered to man should be less than that to either dogs or rabbits, in order that equal effects should be produced. It is, besides, in our power to greatly intensify the action of atropia, by modifying the method of its exhibition. If a minute dose be directly introduced into one of the superficial veins of a rabbit, poisonous effects are very speedily produced, and thus the seeming difference in its action on man and rabbits is at once removed. I have made an experiment in which a minute dose (one-fortieth of a grain) of sulphate of atropia was injected into one of the facial veins of a rabbit that had received, a short time previously, a large fatal dose of extract of physostigma by subcutaneous injection. This dose of the antidote, though but little in excess of what is frequently exhibited by subcutaneous injection to man, perfectly counteracted the lethal effect of the large dose of physostigma.

Some apology may be deemed necessary for the title of this paper, seeing that atropia has never yet been employed in man as an antidote to poisoning by physostigma. The nature of the case, however, requires that good reason should in the first place be given of the existence of an antidotal power, for thereby only can the practical application be justified, and the antidote be employed with propriety and confidence. The evidence that has been adduced of the existence of this antidotal power is of the most satisfactory nature. Indeed, the testing experiments contained in the third series are much more unfavourable to the success of this treatment than any cases which we may expect to occur; as the poison was administered by subcutaneous injec-

tion, and its action, accordingly, produced with much greater rapidity than if the administration had been by the stomach.

In treating cases of poisoning in man, the sulphate of atropia should be given by subcutaneous injection, in doses of from the one-fiftieth to the one-thirtieth of a grain. The exhibition of the antidote should be persevered with, in repeated doses, until the pupils are fully dilated and the pulse rate increased, and probably, also, until the hypersecretion of bronchial mucus, which greatly impedes respiration, is completely checked.

This is scarcely the place to discuss the interesting and important question of the exact action or actions on which the antagonism between these two substances depends. It will be sufficient to mention that physostigma increases the excitability of the vagi nerves, while atropia diminishes and suspends this excitability; that physostigma diminishes the arterial blood-pressure, while atropia increases it; that physostigma greatly augments the secretion of the salivary, bronchial, intestinal, and lachrymal glands, while atropia diminishes and even completely checks these secretions; and that physostigma contracts the pupils, while atropia, to a much greater relative extent, dilates them. Besides these effects of the action through the blood, various opposed topical effects have been observed, among which is the contraction of the veins by physostigma—the existence of which rests on the high authority of Mr. Wharton Jones—and the contraction of the arteries by atropia.

No investigation could possibly be undertaken that will more certainly advance the science of therapeutics, increase its resources, and remove the irrational scepticism with which it is in many quarters regarded, than that of the antagonism between the actions of remedies. For the object of such an investigation is to demonstrate the manner in which certain accurately defined abnormal conditions are restored to normality, by actions of an equally defined and accurately determined character.

ON COUNTER-IRRITATION.

BY JAMES ROSS, M.D.

As I have taken part in the recent discussion on counter-irritation, I hope I may be permitted to make a few remarks on some of the disputed points. As pointed out by Dr. Anstie, it is of great importance to arrive at a satisfactory definition of the term. Dr. Bennett defines counter-irritants as "agents which by their irritant action determine an increased attraction or flow of blood to one part of the body, and thus influence morbid action in some other part." He justifies this definition because, in his opinion, it fulfils one of the main requisites of a definition; namely, "that it shall contain the essential idea of the thing attempted to be defined." Dr. Bennett ought to have told us what he means by an "essential idea." As far as I can understand, an idea is "essential" because it is included in a definition, and it is not included in the definition because it is essential. But let the rule pass. The question remains as to what constitutes the essential idea of counter-irritation. Dr. Bennett thinks that the essential idea is, that counter-irritants produce their action by the increased attraction or flow of blood to one part of the body. Dr. Dickinson, on the other hand, thinks "that the idea at the bottom of counter-irritation is that of superseding one morbid action by another." My opinion is that counter-irritants produce their action by deflecting the morbid process from the course it would pursue to some other course, sometimes towards, and sometimes further from, health. Now, either Dr. Dickinson or I have as much right as Dr. Bennett has to consider our idea as the essential idea of counter-irritation. To assert, therefore, in the definition that counter-irritants produce their action by attracting blood

to one part of the body, is to beg the question. The discussion was raised in order to ascertain, not only the effect, if any, which counter-irritants produce, but also the manner in which those effects are produced; and surely it is a great mistake to include the manner in which the effects are supposed to be produced in the terms of the definition. But if what relates to the theory of counter-irritation be omitted from Dr. Bennett's definition, it will not, in my opinion, be liable to any serious objections. Counter-irritants may be defined as agents which, by their irritant action upon one part of the body, influence morbid action in some other part. I said that the definition, as so modified, would be unobjectionable, but that is only true if we wish to include under the same term irritants, both when applied in the vicinity and at a distance from the morbid part. My opinion is that it would be more convenient to restrict the term counter-irritants to irritants when they are applied in the vicinity of the primary disease; and to designate irritants, when applied at a distance from the morbid part, revulsives, or some such name. This is a matter which involves no principle; it is purely a question of nomenclature. In all probability, irritants, when applied in the vicinity, do not act upon the same principle as when they are applied at a distance from the morbid part; therefore we ought to have a distinct name for each—and the derivation of the term counter-irritation points to it as the more appropriate designation of the former irritants. In this restricted sense counter-irritants may be defined as irritants applied in the vicinity of a diseased structure. It may be thought that the fact that the irritant is applied in order to influence the primary disease should be stated in the definition; but since one part of the investigation is to ascertain how far irritation of one part of the body really does influence disease in its vicinity, this question should not be prejudged by being stated in the terms of the definition. This definition serves to limit the extent of the investigation, without including any point which ought to be discussed during the course of the inquiry. Of course the list of agents which are to be included under the term counter-irritants will depend upon our definition of irritation; but to define irritation belongs properly to pathology, and not to therapeutics. I am not therefore about to

discuss this point further at present, but I may state it as my opinion that no definition of irritants can be framed which will include blisters and mustard plasters, and yet exclude issues and setons.

I shall now offer a few remarks upon the question raised by Dr. Dickinson. The question is, whether disease of the internal organs can be influenced by applying irritants to the surface of the body nearest the seat of the disease. Dr. Dickinson thinks "that we have no clinical evidence sufficient to assure us that a blister on the chest directs any special therapeutic influence to the lungs, or upon the epigastrium to the stomach." Dr. Bennett, on the other hand, thinks that we have clinical evidence sufficient to warrant us in believing that a blister on the chest can influence a diseased lung, even if we are totally unable to explain the facts by theory. He also adduces good clinical evidence in support of his position. We have now to decide between these conflicting opinions. In order, therefore, to come to a decision upon this point, we must endeavour to form an estimate of the importance which ought to attach to the clinical evidence in the entire absence of theoretical evidence. Clinical evidence in this case is, like clinical evidence in by far the majority of instances, merely presumptive; but however defective it may be, it is often all we have to rely upon to guide us in the practical emergencies of life. Disease, especially acute disease, is not a permanent, but a changeable state, and time is generally on the side of health. The action of the forces of nature we can neither suspend nor interrupt. All we can do by our interference is to introduce a new force amongst existing forces, and thus deflect the course of the disease; and when the deflection produced is towards health, a beneficial or therapeutic effect is produced. But when a deflection towards health takes place in a disease, especially if acute, it is doubtful whether it was produced by the forces of nature operating in time independently, nay, even in spite of our interference. It may be urged as an objection against the conclusions from such evidence, that they are instances of the *post hoc propter hoc* fallacy. But since this objection may be raised against clinical evidence in the majority of instances, it is useless to reject that in favour of the beneficial action of

counter-irritants in pneumonia because it is not entirely conclusive. I think that the medical men who have employed counter-irritation in subacute pneumonia, chronic bronchitis, and chronic gastritis, have as much clinical evidence in favour of its beneficial action in such cases as they have for most other remedies employed by them in the cure of disease. I have purposely selected those chronic cases because they are not so liable to sudden changes nor to spontaneous cure as acute diseases. The element of time is therefore, to a certain extent, eliminated, so that we can compare the state of matters existing before and after the application of the remedy. If, therefore, a sudden change ensues, the probability is that it was caused by the counter-irritant. I think I only express the opinion of the great bulk of my professional brethren, those whom Sir William Jenner calls the "silent workers," and to whose verification he justly attaches so much importance, when I say that in the great majority of such cases a beneficial effect ensues on the application of a counter-irritant. The clinical evidence, therefore, being merely presumptive, it follows that to some minds the evidence in favour of counter-irritation in disease of the internal organs will be sufficient for practical purposes; while to others, who either are of a different mental mould, or look at the subject from a different standpoint, the evidence may be quite insufficient. The latter need not necessarily be of a sceptical turn of mind. Indeed, a man who denies that a blister does good in pneumonia may be much more credulous than he who assents to the proposition. The former may, from one or two cases in which a blister has no apparent effect upon the disease, conclude a general proposition; namely, that a blister on the chest never does influence pneumonia. Such a man is much more credulous than he who notes a series of cases, and taking the cases in which the blister appears to do good, and those in which it appears to have no effect, sums up in the end in favour of blistering in pneumonia. This is true even if the conclusion of the latter turns out to be false, because he has taken greater precautions to avoid a false conclusion; and if the former turns out to be true in his conclusion, there is no credit due to him, since he has only stumbled by accident upon a true conclusion.

Dr. Bennett thinks that it cannot excite much surprise "that "Pyrrhonism, the ruling philosophy of the day, should have invaded both practical and scientific medicine." But since the ruling philosophy of the day, however sceptical it may be, only denies the existence of substances *per se*—of noumena as opposed to phenomena—I do not think that any great harm can result from the invasion. The philosophy of the present day not only admits the existence of phenomena, but admits more fully than was done by the philosophy of any previous age, that these phenomena are subject to general laws; therefore both the practical and scientific physician can well dispense with pure existence and noumena. At any rate I cannot well understand how the philosophy of the day is to affect our views with regard to blistering in pneumonia, since the object of the investigation is to ascertain whether the phenomena of blistering modify the phenomena of pneumonia, and to reduce both sets of phenomena, and their relations to each other, to general laws.

But Dr. Dickinson goes much further than to deny that the clinical evidence in favour of blistering in pneumonia is insufficient. He says: "It is not easy, or perhaps I might venture to say it is not possible, to show how the deep inflammation can be advantageously influenced by such proceedings." He thinks that the "onus of proof" rests upon the advocates of counter-irritants; but now that he has undertaken to prove a universal negative proposition, the onus of proof rests entirely upon him, since he can only ask us to reject the clinical evidence in favour of counter-irritants if he can prove "that it is not possible that the deep inflammation can be advantageously influenced by such proceedings." His reason for asserting impossibility in this instance is that there is no direct anatomical connexion between the surface of the body and the internal organs. He discusses the various means by which an influence might pass from the surface to the internal organ, and concludes that it is impossible for such an influence to pass between them as would account for the effects attributed to counter-irritants. In order to estimate the value of Dr. Dickinson's reasoning upon this point, it ought to be remembered that it is theoretical, or, to speak more correctly, hypothetical. Now, before he can prove his position

he must show, not only that all the hypotheses that have hitherto been constructed have failed to account, but that no hypothesis ever can be constructed that will account, for the effects attributed to counter-irritants upon diseases of internal organs. In order to prove this he must show not only that the supposed effects cannot be deduced from any of the known properties of the tissues concerned, but that he is thoroughly conversant with all the properties of the tissues, and that no after-researches will ever reveal properties now unknown to us. For if any of the properties of the tissues concerned are unknown to us, and undoubtedly many are, then these properties may be the very properties, which, if known, would account for the effects. In order to prove that the tissues of the body are endowed with properties now unknown to us, we are not left to a vague general statement of the imperfections of the sciences of physiology and pathology; because there is evidence from which we can infer that properties exist which are more or less analogous to those which would explain how a certain influence might be conveyed from the surface of the body to an internal organ. Dr. Bennett has adduced a great many instances from which this can be inferred. He instances pleurisy, pneumonia, or bronchitis supervening upon sudden exposure of the chest to a draught of cold air—bronchial affections of children being relieved by the occurrence of an eczematous eruption on the scalp, and *vice versa*—the consensus between the mammæ and the uterus, between the testicles and the parotid, as well-ascertained facts for which physiology does not afford a sufficient explanation. Another beautiful instance of the relation which may exist between one part of the body and a distant part was given by Dr. Brown-Sequard at the meeting of the British Medical Association at Leeds. He cut the sciatic nerve of a guinea-pig, and showed that he could induce an epileptic attack by gently rubbing the skin at the back of the ear of the same side. All these cases show that an influence may pass from one part of the body to another without more direct anatomical connexion than exists between the surface of the body and the internal organs. We cannot give a satisfactory explanation of how the influence is conveyed from the one part to the other, and therefore infer that the tissues concerned

must have properties not only unknown to us, but presumably similar to those which would be requisite for conveying an influence from an irritated surface to an internal organ. Therefore amidst so much ignorance it is too much for Dr. Dickinson to say, from theoretic considerations, that "it is not possible" to produce the effects atributed to counter-irritants upon internal organs. In the absence, therefore, of *a priori* proof of the negative proposition, we must fall back upon the clinical evidence, let it be ever so faulty; and the value which ought to attach to the clinical evidence has already been estimated.

Dr. Dauvergne, as translated by Dr. Anstie in the *Practitioner* for October, denounces the practice of blistering in pneumonia. He does not, however, make any assertion with regard to the other counter-irritants; and since he does not speak on the general question, his contribution does not alter the scientific aspect of the question, however important it may be to practical medicine. He does not deny that blisters may affect the disease—he even asserts that they may aggravate it; and if this is the case, some influence must pass between the blistered surface and the disease. But even as far as practical medicine is concerned, not much importance is to be attached to Dr. Dauvergne's objections. He tells us that he renounced the use of blistering after treating unsuccessfully two pneumonic patients with large blisters. This is a case of extreme credulity and not of scepticism. He, and not the country practitioner, is the man of "robust faith." The little insight he gives us into his practice prior to his renunciation of blistering, shows that he applied blisters in the very early stage of the disease when the skin was hot; and also that he bled about the same time that he blistered. Now, the practice of the present day is opposed to this. Blood-letting, if employed at all, is used in the very early stage of the disease; while blisters are applied when the skin has become moist, and when the second stage of the disease has become developed. Seeing, therefore, that the practice of Dr. Dauvergne, when he renounced blistering in pneumonia, was so much opposed to the practice of the generality of medical men, I think that the "country doctors" may be content that he should continue to find "in absolute opposition with them upon this point."

But, however defective may be the evidence in favour of the action of counter-irritants in the case of the internal organs, all agree that these agents produce a powerful effect when there is continuity of tissue between the part to which they are applied and the primary disease. I shall therefore go back to a point which has been somewhat neglected during the progress of the discussion: I mean the relation which ought to subsist between our theory and practice of counter-irritation. As pointed out by Bacon, we ought to have a set of intermediate propositions to stand between a science and the art founded upon it. It should therefore be our aim to arrive at such a proposition or propositions to stand between the theory and practice of counter-irritation; and if no such proposition is elicted during the progress of this discussion, I shall consider that the great object of a discussion like this is missed. I have in another place endeavoured to prove that the main intermediate proposition between the theory and practice of counter-irritation is, that irritation of one part of the body tends to stimulate the textures in its vicinity. I have endeavoured to prove this proposition theoretically, and to show that it can be inductively inferred from the facts ascertained by observation at the bedside. Dr. Anstie suggested "the stimulant view of so-called counter-irritation in 1861." I put forward a claim of priority, and that claim I now to a certain extent withdraw. Dr. Anstie thinks "that the influence of counter-irritants is not vitally depressing, but stimulating, *when they really do produce a good effect.*" The italics are not mine. He adds, "but I should deny at once, on the ground of repeated observation, that they never tend to lower vital action; on the contrary, I have seen them so lower it with most disastrous results." I do not deny that the effect which ensues from the concurrence of the force derived from the artificial irritation, and the forces existing in the morbid part, may be a "vitally depressing" one. This, on the ground of repeated personal observation, I know to be the case. But although this is true, it may be no less true that the *tendency* of counter-irritation is to stimulate the morbid textures in its vicinity. Dr. Anstie might as well say that smoke has no tendency to the earth because he has seen it

ascend. But smoke has weight, and its weight is its tendency to the earth. It ascends because it is acted upon by other forces besides gravitation. When the effect, therefore, depends upon two or more causes, the effect which ensues is no test of the tendency of one of these causes. It may therefore be true that counter-irritation always tends to stimulate the morbid textures in its vicinity, and yet that the effect which actually ensues is a vitally depressing one. A fresh stimulation may lead to a fresh accession of effusion, and ultimate destruction of the part. But whether this is true or not, it is as certain as anything can be that the objection urged by Dr. Anstie against it is not a valid one.

Since Dr. Anstie has reviewed my theory in the *Practitioner* for June, I trust that I shall not be trespassing upon the patience of the readers of that journal if I say a few words in reply. I may premise that in that review Dr. Anstie has given in a few words a good analysis of my argument; indeed it is only one who is accustomed to analyse books, and to grasp a subject as a whole, who could present the gist of a rather complicated argument in so few words. He, however, raises objections against my empirical laws which are not quite just. In the first place, he objects to these laws because they are not strictly true; or, as he expresses it in another place, they are "much too absolute." But this is the character of all empirical laws. The most perfect empirical laws for the purposes of science mankind ever possessed are Kepler's laws; yet they are not strictly true—they are too absolute. One of them is that a planet describes an ellipse in its revolution round the sun. But this takes no notice of the perturbations, and as an expression of the truth it is much too absolute. But it was this very character that gave them their chief value, since, if Kepler had endeavoured to express all the facts of the case, his description would have been so cumbrous that probably Newton would never have succeeded in unravelling the forces which caused that revolution. Therefore the question that has to be settled is whether my empirical laws are an expression of the main effects of counter-irritants; if they are, it is no objection to them to say that they are not strictly true.

But Dr. Anstie raises another objection against my theory, which is more erroneous than this one. He thinks that the empirical laws are the "foundation stones" of my theory. He says in one place: "It is impossible for me to accept this very sweeping statement as an empirical law from which we can proceed to any useful deductive process." Surely Dr. Anstie has made "a slip in his logic" in thinking that a theory can be deduced from the empirical laws of the effects. So far is this from being the case that the theory could be constructed without the slightest reference to the empirical laws; and indeed it would be possible to construct my theory antecedently to any knowledge of the action of counter-irritants upon disease.

The empirical laws are collected in order to test the theory when completed. As tests, therefore, it is only necessary that they should be an expression of the main facts of the case. I think that my empirical laws are near enough expressions of the truth to act as such tests, and more especially to test the erroneousness of the current explanations of counter-irritation. At any rate it remains for my critics to show that they are not, or to attack my theory from a different quarter, unless they admit its truth.

Dr. Anstie strongly objects to the empirical law which says that "the greater the irritation, and the deeper the destruction of the skin caused by the counter-irritant, the more marked and the more permanent is the effect." "If by this," says Dr. Anstie, "the author does not mean a curative effect, the law is meaningless." But what gives the chief meaning to this law is that I do not mean a curative effect. The empirical law was expressed in order to aid me to test a theory, therefore I was entirely in the region of science, and to the eye of science a curative effect is no more desirable than an injurious effect. Both effects require an explanation. It surely, therefore, is a very partial view to take of an empirical law to say that it is meaningless if it take cognizance of an injurious effect as well as of a curative effect. This law to which Dr. Anstie so strongly objects is, like the other empirical laws, not fully adequate as an expression of the facts; but he will not surely deny that the effects of counter-irritants vary in some measure according to the degree of the irritant. He has admitted that a blister

may aggravate the first stage of inflammation, but that the milder irritants may have a beneficial effect; he will not, therfore, object to my calling the effect when the disease is aggravated a more marked one than when it is alleviated. In chronic cases of disease which require a great deal of stimulation, Dr. Anstie will, I think, admit that *cæteris paribus* a blister has a more marked effect than a mustard poultice, a pustular eruption than a blister, and an issue or a seton than a pustular eruption. At any rate the practice of the generality of practitioners, when translated into the experimental evidence upon which it is founded, indicates that such is their opinion, since it is in cases which require the least stimulation that the milder, and in those which require the greatest stimulation that the severer, irritants are employed.

In bringing these remarks to a close, I may be allowed to express the hope that Dr. Anstie will ere long unfold his views on counter-irritation more fully than he has hitherto done. He has already promised to speak "upon the general question at some length." I look forward with no small interest to his contribution, and trust that it will throw great additional light upon this important department of therapeutics.

THE GROUP OF WELSH MINERAL WATERS.

BY JOHN MACPHERSON, M.D.

It has not hitherto been necessary to take into consideration any elements but sulphuretted hydrogen and iron, but on crossing to the Welsh group of wells another class of salts, the chlorides appear, and especially common salt. On its properties I shall say nothing here, but remark that it is the chief constituent of a great many of the most popular drinking mineral waters in the world, and of the most important waters used in bathing, whether in the sea, or in the various salt baths of different degrees of concentration in inland places. Perhaps the best notion of the Welsh springs may be got by comparing the amount of salt per pint they contain with that contained in other salt springs. And here I must say just as strongly as of the Irish mineral waters, that accurate analyses of most English and Welsh wells are still required, and that the following comparison is only approximately accurate:—

	Common Salt.	Chlor. Magn.
Builth	66·4	—
Landrindod, Saline	35	9
„ Chalybeate	29·6	3·6
„ Sulphur	27	—
Harrogate, Montpelier, Sulphur	29·65	2·142
„ Kissingen	82·1	4·54
Moffat	22	—
Homburgh, Elizabeth	76	7·7
Kissingen, Rakotsky	45	2·33
Kreuznach, Elisen	72	4
Pyrmont, Salt Spring	54	—

As the Prussian 16 ounces of 7,680 grains is here compared with the imperial pint of 8,740 grains, about one-eighth should

be added to the quantities in the foreign spas to make these comparisons accurate.

The Welsh springs first attracted notice about 120 years ago; they have always been resorted to more or less by the people of the Principality, and now that they are opened out by a railway, a more extensive resort to them is very naturally expected.

The first of these wells that I shall mention is *Llanwrtyd*. About a half mile from the railway station is the village, with several small hotels and lodging-houses on each side of the bridge over the Irvon; and a few yards out of the village is the principal and comfortable hotel of Dolecoed House, close to the two wells. The principal well, which is counted the most important sulphur one in Wales, contains in the pint about 8 grains of common salt and ·62 inches of sulphuretted hydrogen; there is a chalybeate of fair strength close by, but there is no accurate analysis of it. There are a tolerable pump-room, and a bath which did not look to me particularly inviting. The wells are situated at the opening of a little valley; there is some wood about, and a few walks have been laid out, and seats, which last are rather dilapidated. There has been less pains bestowed on the place than on Ballynahinch. The country generally may be described as open airy upland. The bathing seems quite secondary. Now that the railway is so close, the visitors, besides wandering about the neighbouring hills, are able to have the variety of more distant excursions.

These waters have been found very useful in cases in which sulphur waters are indicated, and are chiefly employed in skin, liver, and disorders of the digestion. They have also been employed, unlike similar English waters, in bronchial irritation, and in threatened tuberculosis. The quantities of iodine and bromine present scarcely enter into consideration any more than the minute quantity of common salts. Patients usually begin with two or three glasses before breakfast, drunk with a quarter of an hour's interval between them. This season has been a good one. I was told that at the height of the season there were more than 300 visitors drinking the water.

The following is Herapath's analysis of the solid contents of an imperial gallon :—

Chloride of Calcium	7·29
Bromide of Calcium	1·66
Iodide of Calcium	·61
Chloride of Magnesia	1·92
Chloride of Sodium	58·544
Sulphate of Soda	·512
Carbonate of Lime	2·08
Silica	6·48
Organic Matters	9·5
Total	86·8

There is another sulphur spring in the bed of the Irvon at Llangammarch, but it appears to have nothing in its situation to recommend it, and it seems never to have been fully investigated. It appears to be a mild aperient, and probably contains some Glauber salts.

The river Irvon falls into the Wye, and some four miles below the junction, situated on its beautiful banks, lies *Builth*, a picturesque place, with much to make it popular besides its excellent wells. They are three in number, close to each other, and called the saline, the sulphurous, and the chalybeate. They are about a mile distant from the town, and have a pump-room. By far the best known well is the saline one. Although there appears to be no very accurate recent analysis of it, the old one of Daubeny shows a great resemblance in composition between it and the chief well at Kreuznach, and the salt one at Pyrmont.

	Builth Saline.	Kreuznach, Elisen.	Pyrmont.
Chloride of Sodium	66·4	72·83	54
„ Calcium	11·2	13·38	Carb. 10
„ Magnesia	trace.	4·67	Sulph. 7
„ Sodium	„	Iodide of Magn. ·035	—

As the Kreuznach water is just as deficient as the Builth one in carbonic acid, I have no doubt that the drinking of the saline of Builth will produce every effect that drinking the Elisen well at Kreuznach will do. But then there are not in Wales the strong salt baths to support the other treatment, which are so vigorously employed in Germany. The carbonated Pyrmont

one is of course much pleasanter to drink. It is unfortunate that so little is known in detail of the other Builth springs. Apparently one of the springs has a very considerable amount of sulphur in it. The neighborhood of Builth is very interesting, far more picturesque than the open wells of Llanwrtyd and Llandrindod, and has a ruined castle and a moat, or dun. And if it were only possible to speak positively of the constituents of the wells, one would be inclined to say that so picturesque a spot might have a great future before it, with waters that ought to be applicable to a great variety of cases. Another analysis makes the solid constituents of the Builth spring a good deal larger than as stated by Daubeny. But the weaker analysis makes them quite as strong as is desirable for the class of waters to which they belong.

Llandrindod, however, is for the present the chief spa in Wales.

The train sets one down in the middle of an open plain with a good many new houses springing up. The common is not very attractive at first sight, although on a fine day the pleasant views in the distance relieve the scene. The saline and sulphur wells are situated some seven or eight minutes' walk from the station, among some trees, where also is the principal hotel; and further up among the trees once stood the hotel which formerly had an unenviable reputation for gambling. Public gaming tables fortunately are unknown to other English spas. The chalybeate or rock well is out on the common. The wells of Llandrindod have, owing to the healthy air of its uplands, and the real virtues of its waters, always enjoyed a considerable amount of local patronage. Dr. Linden in 1755 wrote a book of considerable interest about these wells; and there is every reason to believe that their popularity will greatly increase since the railway has made them accessible from all parts of the kingdom. This season it is said that as many as 600 visitors have been at one time taking the waters. Here too, as at Builth, the wells are classed as saline, sulphurous, and chalybeate; perhaps a comparison of the two chief wells with two very popular ones (as most people know the class of cases sent to Harrogate or to Kissingen) will give the best idea of the cases in which these waters may be expected to be most useful. Unfortunately there

is some uncertainty as to the amount of chloride of magnesia present, and still more unfortunately as to the exact quantity of iron.

	Llandrindod, Saline.	Kissingen, Pandur.	Llandrindod, Chalybeate.	Harrogate, Hospital, Mild Sulphur.
Chloride of Calcium	2·06	—	1·3	—
„ Magnesia	9·0	1·8	6	—
„ Sodium	37·5	42·3	28	27·578
„ Iodides	trace.	—	·002	trace.
„ Bromides	„	—	trace.	
Carbonate of Iron	„	—	1·4?	„
„ Lime	·5	7·7	·54	2·47
„ Silica	·15	—	·16	·186

The quantity of the essential salt, that is, common chloride of sodium, is, therefore, much the same at Llandrindod as in either the Pandur or the Rakotsky at Kissingen; the absence, however, of carbonic acid from the former will prevent its ever being so pleasant to the palate, or indeed sit so lightly on the stomach, as the Kissingen waters.

Either, however, of the chief springs, and indeed the sulphur is much the same in all essentials, may very fairly be compared with the Hospital well at Harrogate, which Dr. Myrtle tells us is the most popular of all its wells. If he says that he has known many cases of gout and rheumatism, which had resisted a prolonged course of hydropathy as well as a fair trial of the waters of Buxton, entirely cured by them, why should we discredit similar effects at Llandrindod?

According to Dr. Richardson, of Rhayader, who has written on them, the saline is most useful in the scrofulous diathesis, and in constipated habits, for dyspepsia, chronic liver affections, and hæmorrhoids, gout, chronic rheumatism, and many functional diseases of women. The sulphur water is recommended in diseases of the skin, chronic bronchitis, rheumatism, and lead palsy. The saline water should be taken as a purgative early in the morning, in doses of half a pint every ten minutes; brisk exercise should be taken in the interval, and the quantity required will be from three to ten half-pints; however, it can never be desirable to take the larger quantity. It is recommended that the sulphur water should be taken during the first day in doses of two or three glasses, and it may be increased

till ten or twelve doses are taken. But the sulphur water is believed to be most efficacious as a bath. The chalybeate well is recommended for anæmia and chlorosis; it is recommended that the dose should only be a wine-glassful the first day, and the patient is warned against flushings of the face. But they must be purely imaginary, unless the spring is far stronger than has been supposed.

At Llandeyley, about six miles from Llandrindod, are two wells, a sulphur and a chalybeate, said to be powerful, but they are very imperfectly known, as well as some similar springs in its neighbourhood. Dr. Richardson, who keeps up his interest in these wells, favours me with the following discriminating remarks:—

"I have found in very many cases that the sulphurous waters of Llanwrtyd and of Llandeyley, which are as nearly as possible alike, are very beneficial in the incipient stage of consumption. The waters are taken in the morning on an empty stomach, and a wine-glassful or two of the chalybeate about three o'clock in the afternoon, or after the principal meal of the day. A course of these waters is of use in most cases of tuberculosis and of skin complaints. The Llandrindod and Builth waters are more particularly used for indigestion and liver affections. For those patients who are of robust constitution, the Builth waters are preferable. But in cases of chronic gastric irritation, generally the Llandridod waters are best. The experience of some years confirms most of the opinions thrown out by me in the Guide-book to the Welsh springs."

Taafe's well, near Cardiff, the only thermal well in Wales, and which is charged with nitrogen, does not seem to have attracted any attention since it was noticed by Daubeny.

On the whole, the Welsh group of wells is in every way worthy of further attention; and the most experienced physicians in Wales recognise their value, such as Dr. Prestwood Lucas, of Brecon. It is difficult to part from the Principality without congratulating it on its richness in sea-bathing places. Among the best known are Llandudno, Penmaenmawr of late years, Aberystwith and Tenby, all, at least three of them, places on a large scale. The number of quiet bathing-places is very large.

THE SYMPTOMS, CAUSES, AND TREATMENT OF CYNANCHE TONSILLARIS.

BY F. P. ATKINSON, M.D.

Late Surgeon St. Bartholomew's Hospital, Chatham, and Royal South London Dispensary.

It is curious how little in some cases medical treatment seems to avail, and how in spite of the means used the patient continues day after day in the same condition. Though we have the remedies at hand specially suited to the cure or relief of the disease, owing either to our ignorance regarding its real nature or cause, or to our limited knowledge concerning the action of drugs, they are not applied. As a general rule I think it may be said that, the less dangerous a disease is, the less really is known as to its treatment. Take for instance that common ailment—quinsy. What are we able to do towards stopping its progress, or alleviating the pain attendant upon it? We apply turpentine, mustard, or linseed meal externally, and administer remedies internally, but yet, usually speaking, no relief is gained till nature comes to our aid, and the disease terminates by resolution or suppuration. I recollect one medical man who had had me under his charge on several occasions for quinsy, and tried almost every remedy he could think of, at last saying, "Well, I don't see what is the use of torturing you in this manner, for you seem to go on in exactly the same way no matter what is done; let us try how you get on for once by yourself." The result was the same. Suppuration in the natural course of things took place, and I was then at comparative ease and well. But still I have no hesitation in saying, that had this medical man known and applied the remedies most suitable for this complaint, many days and nights of pain and restless anxiety might have been

spared. That drugs are able to influence the course of cynanche tonsillaris I am quite sure, for with the treatment I have adopted during the last two or three years I can predict with almost perfect certainty that my patient will be, comparatively speaking, restored to health on the third day. The usual duration is about one week.

I will first say a few words as regards the symptoms, and what I consider the causes of the disease, and then describe the treatment to be adopted for its relief.

The symptoms as described by the patient are—shivering followed by hot burning skin-pain and throbbing in the tonsil, stiffness of the lower jaw, constant flow of thick saliva, accumulation of tenacious mucus at the back of the throat, pain and difficulty in swallowing, especially at night, pain and difficulty in speaking, pain in the ear when suppuration has commenced, great irritability and languor, bowels confined, urine high-coloured.

On looking into the mouth the fauces are seen to be red and swollen, the uvula elongated and œdematous, adhering often to one tonsil, which is covered with a tenacious mucus. The submaxillary glands are felt to be enlarged (owing to sympathetic irritation). The patient makes a peculiar side movement of the head on swallowing, and has a peculiar thickness of speech, as if the mouth was full of something hot. The pulse is full and quick.

The predisposing causes of quinsy are—want of tone about the system generally, owing to excess of mental or bodily exertion or long-continued fasts, chronic dyspepsia, imbibition of alcohol before going into the cold night-air (congesting as it does the mucous membrane of the throat and stomach). The exciting cause is cold producing suppression of perspiration. The materies morbi here selects the tonsil, the same as it does, in gout, the great toe. I do not at all hold with it being the result of cold acting directly on the throat, for then laryngitis would be a much more common accompaniment than it now is; besides, in my own case, I noticed that the attacks came on most frequently when I took most care in wrapping up my throat; while exposure to night-air, and want of precautions, seldom seemed to produce an injurious effect. Moreover it

appeared, however careless I might be directly after one attack had passed off, though in a weakened condition, a second never followed.

The treatment I prescribe is the following:—Bicarbonate of potash, one scruple; powdered guaiacum, ten grains, or tincture of guaiacum, half a drachm; mucilage, as required; water to the ounce. To be taken with fifteen grains of citric acid three times a day, in a state of effervescence. A gargle consisting of twenty minims of tincture of iodine to the ounce of water (to be used by being held in the mouth and the head shaken from side to side.) Three or four glasses of port wine daily, and plenty of beef-tea. If the weather is fine, I order my patient to take a little gentle exercise in the open air. No other application is required for the throat than that mentioned. Purgatives I do not consider necessary, since as soon as the disease is over the bowels regain their proper tone, and become perfectly regular.

The advantage of the above line of treatment may be shown by relating the two following cases. While on a visit to a friend some two years ago, I was asked by a gentleman to see his brother, who was suffering from a bad attack of quinsy. I found him in bed with poultices and flannels round his throat, looking the very picture of wretchedness. He could neither speak nor swallow without great difficulty. I ordered him to get up at once, to throw off all wraps from his throat, and take gentle exercise in the open air. The medicine prescribed was the same as mentioned above. On the second day he was able to go off to his office, feeling comparatively well. A day or two after this a gentleman next door to where I was staying was taken with the same thing. He was kept to his bedroom; had mustard and linseed-meal applied to his throat; in fact, I may say, went through the usual line of treatment, and the result was that he was ill for more than a week.

Persons who have had quinsy before, which has usually run on to suppuration, are perfectly incredulous when I tell them they will be well in three days; but results almost always prove the correctness of my statement.

Of course where suppuration has commenced (as shown by the pain in the ear), the treatment is utterly unavailing, and I

then stop all medicines, and simply administer wine and beef-tea.

I have tried almost every kind of treatment upon myself, both general and local, and I can say most positively that this will be found the best. I do not really think I am stating too much when I say that it is almost a specific. At any rate I shall be quite willing to leave it for my professional brethren to disprove or endorse the opinion held.

A PLEA FOR COMPULSORY VACCINATION REFORM IN SCOTLAND.

BY ROBERT TURNER, M.D.

An impartial review of the subject of vaccination, such as has been given in the *Practitioner* for October and November last, will be highly acceptable to medical readers, and must prove, at the same time, a seasonable and useful appeal to the general public in its own interests. No more direct reply to the crotchety, yet somewhat mischievous Anti-Compulsory Vaccination League can be needed; for I believe this notable crusade may very safely be left to itself, its tendency to early death from collapse being manifest.

But while satisfied that the beneficent mission of Jenner and his successors has little to fear, in this our enlightened day, from active hostility, lay or professional, I am as firmly persuaded that the great enterprise suffers material impediment at the hands of many of its friends, either from the too implicit reliance of some on our present legalized system of vaccination, or because of inertness, in word and deed, on the part of others, to whom the defects of that system are known. The means of defence, therefore, from one dread scourge of our race, which, properly employed, would be complete, are by this over-confidence and indifference combined rendered uncertain and limited in this country. Vaccination *as it is* leaves us a prey to the not infrequent invasion of small-pox; vaccination *as it might be* would banish the disease for ever from the land.

In the course of a professional life extending to upwards of thirty-five years, I have been cognizant of the doings of *bane* and *antidote* throughout a wide and populous district of country,

and during most of this period, until the Compulsory Vaccination Act for Scotland became law, some five years ago, the protective measure has been here so imperfectly and perfunctorily applied, that the wonder might reasonably be, not that the expedient has failed in certain instances to confer immunity from small-pox, but that failure has not been much more common. However competent or zealous the almoner, obstacles of various kinds prevented the due bestowal of the gift. The practitioner was seldom afforded an opportunity of ascertaining for himself the result of an operation; for his employers, being under no legal compulsion, very rarely brought their children for after-inspection, but, self-constituted and sole judges in the matter, either took no further notice of it, or were content with advising the doctor, at their convenience, that "the pox" had or had not "taken," as in their judgment the case might be. The spurious and the genuine pock were thus, obviously, on an equal footing as regarded the chance of approval; and the difficulty, with the country practitioner, of keeping up his supply of efficient lymph under such circumstances can be readily understood. The difficulty rose to an impossibility when, as often occurred, half a year or more elapsed without his being ever called on to vaccinate. In many instances, too, the subjects for vaccination in a family were allowed to accumulate, and one *seance* was made to serve for half-a-dozen children, *plus* (not improbably) the offspring of half-a-dozen neighbours.

The greater number of recipients, besides, did not come under the notice of the regular practitioner at all, but were dealt with by the midwife, a canny friend, or the father, or mother, armed with clasp-knife or darning-needle. I remember one amateur vaccinator of great local repute, a "surgeon to old shoes," the weapon of whose anti-varioloid warfare was his *awl*. The arsenal of this body of volunteers was in keeping with their armory. Matter belonging to any stage of vaccinia, or even the scrapings from the moistened under-surface of the effete crust, after it had dropped off from the arm, served the purpose; and when the produce of this rude husbandry was a pimple or sore of any description, it sufficed.

In not a few cases, protection from small-pox was never invoked in any way.

As for *revaccination*, I may say, shortly, that except by the more intelligent class of patients, it was seldom acceded to when proposed, and still more rarely applied for, unless when an occasional pressure from without, in the shape of a visitation of small-pox, arose and frightened some into availing themselves of the means of safety.

Examples of *insusceptibility*, I may mention by the way, have not been very much more common in my practice, nor in that of many of my brother-practitioners whom I have questioned on the point, after renewed than after first vaccinations,—a fact from which I think the plain inference is that the first-named procedure is an advisable one.

Such is a not overcharged description of vaccination (so called), as I have personal knowledge of its being practised in this quarter, before the existing law in relation to it came into operation; and if my description were applicable to this one district alone, or if the evil influence of the system described had ceased on the introduction of a better, such a record would be little profitable or interesting; the "dead past" might fitly be left to "bury its dead" but I venture to affirm, as the result of much inquiry on the subject, that the method pursued in other parts, during the period in question, was in no essential respect more satisfactory, vaccine institutions, and other facilities in our towns for the due employment of the measure, notwithstanding; and I need not say that, in a community so circumstanced, a law providing only for the vaccination of children, left many individuals absolutely or probably without protection; nor is it necessary to point out that many living amongst us are in one or other of these conditions at the present hour.

The comportment of small-pox in the country, as I have observed it, has been on every occasion of its appearance precisely what might have been anticipated, considering the nature of its sphere of action. In the unvaccinated subjects of attack, the malady ran its course with all its wonted severity and fatality. In a certain number of cases, where there was reason to believe that cow-pox had once been efficiently imparted, although at a remote period, the disease, taken in a mitigated form, proceeded mildly and ended favourably, producing no pitting or other bad consequence; but on others so circumstanced,

the one early vaccination appeared to exert no modifying influence whatever—great disfigurement and other untoward effects following in several, and death in some instances.

On the other hand, I have never met with small-pox, even among the attendants on those affected with it, and others much exposed to its contagion, in any case in which vaccination (or revaccination) was of more recent date than *ten years* preceding the period of exposure; and, keeping in view the pre-eminent activity of the varioloid poison, I believe we shall not err in ascribing such escapes, as a rule, to the protective agency of cow-pox.

The conclusions to which the foregoing statements irresistibly lead, will be found in strict accordance with generally received opinions in the profession. It is a corrollary from both that, as regards the fulfilment of its professed purpose, the present vaccination law for Scotland is defective, securing, as it does, adequate protection only to children under the age of six months for the ensuing eight or ten years of their lives, and ignoring the wants of the rest of the population—a portion of whom it leaves as obnoxious to the ravages of small-pox as were the inhabitants of Puynipet, when the disease visited them, for the first time, some fifteen years ago.[1] It is not to be denied that cow-pox *once* introduced into the system, will, in some instances, confer lasting exemption from small-pox; but it is just as certain that in other, probably in not fewer instances, the power of the preventive agent is of limited duration, the tenure of certain protection lasting only for the period above stated. And when this lease of presumable safety has expired in any given instance, who can predicate the result of exposure to the contagion of small-pox—whether the person exposed shall resist the disease or not, or whether, if attacked, it shall be mildly or the reverse?

[1] An Austrian frigate, circumnavigating the globe for scientific purposes, touched in the course of the voyage (in 1859) at the island of Puynipet, one of the Caroline group, in the Pacific. The island is about sixty miles in circumference, with a population of 2,000. In 1854 the population had amounted to 5,000, but in that year an English captain left on the island one of his crew suffering from small-pox. The natives stole the sick man's clothes and other effects, thereby catching a very decided Tartar, for *above three thousand* of the *five thousand* perished from the disease; a "modern instance" proving that Samson is still terrible as ever, where Jenner's Delilah has not ensnared him and shorn him of his strength.

Moreover, granting for the sake of argument what is contradicted by fact, that the proportion of the defenceless in society is as small as some allege, are not the chances equal that the man of signal usefulness, or the garrotter, may be the victim of this imperfect legislation?

Happily these considerations are not of the sort that

"Probe the wound and fail to bring the plaster."

for, while exposing the evil, they point as clearly to its effectual remedy:—*a thorough general vaccination or revaccination of all unprotected members of the community, of whatever age; and this made imperative by law.* I suggested and advocated, although in vain, in the *Scotsman* newspaper, the adoption of a measure of this kind, when our present Vaccination Act was in preparation by the then Lord Advocate. Various objections—futile objections, as I esteem them—were urged at the time in opposition to my views.

The proposed measure was pronounced unnecessary, inasmuch as a general vaccination of *infants* would be found sufficient to secure for the entire population the necessary protection from small-pox. This objection, I think, need not be dwelt on, as it has already been fully disposed of.

Such extended compulsion, it was farther held, was inexpedient, as involving an undue interference with the liberty of the subject; an argument which, if it had any just foundation, must tell equally against the existing enactment, which legalizes compulsion as well. Surely infantile subjects have their rights in common with those of maturer years. But the proposed constraint is as defensible as it is salutary; and, with all respect for my fellow "free-born Briton," I maintain that when it is certain, as in the present case, that he will not give voluntary effect to an arrangement calculated to promote the general weal, he ought, in accordance with long-established principle, to be coerced into obedience. If his pigsty, his untrapped cesspool, his open or unflushed drain, so much as stink in the public nostrils, legal compulsion is brought, and properly, to bear on him for the abatement of the nuisance; why, then, should State interference be withheld when called for to prevent him from keeping his body in readiness for the reception and the trans-

mission to those around him of a surpassingly loathsome and deadly disease? Our sanitary precautions as devised against the generation and spread of *typhoid fever* are as complete as they can well be made,—must those in force for arresting the progress of the more formidable invader, *small-pox*, be allowed to continue less so?

The proposal was also objected to on the ground that the difficulty and cost of carrying it out must be so great as to forbid its adoption; and I admit that if the requisite machinery for enforcing it, and for obtaining evidence of its having been duly complied with, had to be constructed and kept in action expressly for these ends, the objection would have much weight; but, by a fortunate chance, as I regard it, appropriate and inexpensive means of effecting both are, so to speak, ready to our hands. The census returns, as is well known, are collected every tenth year,—and to collect, at the same time, certificates of the vaccination, or revaccination, within the decade preceding, of every man, woman and child throughout the kingdom, would entail but little additional trouble on the staff of officials employed for the former purpose, and little additional outlay of the public money.

In one or two other, although less important points, our vaccination law admits, I think, of reform. As things are, the maintenance of the supply of efficient lymph is rendered uncertain, partly by carelessness on the part of parents and guardians, and partly in consequence of a rather wide-spread notion among the many, that breaking the vesicle impairs the protective influence of cow-pox; and the vaccinator has to beg—not always successfully—as a favour, what should in justice be secured to him as a right. For the redress of this grievance nothing more is required than a provision in the Act that the vaccinated child shall, on the day week following the operation, be produced for inspection, and in order that the vaccinator may take, should he think fit, the necessary supply from the arm for the use of others. A constant supply of vaccine in its most active state, direct from the vaccinifer, could thus be almost certainly obtained, and the risk of failure for the employment of unsuitable lymph, as well as the trouble of storing, would be avoided.

One other suggestion I would offer. On theoretical grounds—for I believe we have no positive experience on the point—the energy of lymph produced by a second, or any later vaccination, is open to the suspicion of enfeeblement. This possible, indeed rather probable cause of failure, the law might, of course, remove by obliging all operators to use the lymph of *first* vaccinations only.

Neither the *practicability* of a thoroughly amended system of vaccination, nor its *sufficiency* to accomplish the complete eradication of small-pox from amongst us, need, however, be contended for as matter of opinion alone; for experience in other countries—in Denmark, France and Prussia, for example—has fully established both.

A late proposal[1] to arrest the spread of this disease by *isolation* and other extraneous means, has no doubt much to recommend it in our partially defenceless present condition; but a plan giving still surer promise of success,—one as easily worked, to say the least, and as little likely to disturb public feeling, awaits our adoption. Without, therefore, disparaging the method of "*stamping out*," in the absence of a better, I confess to a stronger preference for *keeping out*.

[1] Sir James Y. Simpson, in the *Medical Times and Gazette* for January 4 and 11, 1868.

Reviews.

A Treatise on Asiatic Cholera. By C. Macnamara, Surgeon to the Calcutta Ophthalmic Hospital. London: Churchill. Calcutta: Thacker, Spink and Co. Bombay: Thacker, Vining, and Co. 1870.

It was with much interest that we opened this volume. Besides the importance of the subject, there was much, in the known ability of the author, and in the fact that he has enjoyed large opportunities of studying cholera in its Indian home, to raise our anticipations of the result of his researches. In many respects these anticipations have been fulfilled. There has been at all events no lack of industry in the collection of facts bearing on the natural history of the disease, nor of independent thinking as to its pathology. The work contains an extensive collection of facts resting on copious evidence which has never yet been laid completely before the public. The history of the several great epidemics of cholera is traced with great fulness. And as regards that vexed question, the pathology of the disease, the doctrines of the author are so important that it will be necessary for us to describe and to some extent discuss them. But in regard to treatment, where we had hoped that the unusual opportunities enjoyed by the author would have produced some discoveries of magnitude, we are obliged to be content with very moderate achievements. Not that what Mr. Macnamara says on this point is uninteresting; on the contrary he comes to one or two conclusions, especially in the destructive direction, which it was very necessary that we should know. After all, however, the impression left on the mind after closing this volume is not much brighter or more hopeful than before. The hygiene of the future may exterminate cholera in its Indian birthplace. But for actual cholera patients, as long as such are found, we cannot yet pride ourselves on being able to do very much.

There is one accidental feature of Mr. Macnamara's work which gives it an interest that is quite exciting to those who care about cholera controversies at all. Mr. Macnamara was a pupil and

house-physician under Dr. George Johnson at King's College Hospital during the cholera epidemic of 1854, and seems at that time to have adopted both the pathological and therapeutical doctrines of his teacher. His transference to India soon placed him in a position to test the treatment on a large scale; and the result of these experiments, and of his own researches and reflections, have been to make him reject the opinions of Johnson entirely. We are sorry that this should be so: it would have been highly convenient if Dr. Johnson's ingenious theory had proved to be sound, but it is impossible to ignore the significance and weight of the evidence given by Mr. Macnamara under such peculiar circumstances. But we are a little anticipating the proper course of our remarks.

In regard to Pathology Mr. Macnamara holds a very distinct set of opinions, which in one or two respects are peculiar. In the first place he is quite decided in the belief that the exhaustion of cholera patients, and the physiological essence of collapse, are due to the outpour of serum from the blood. This outpour proceeds from an intestinal surface which has become denuded of its epithelium; and this denudation not merely causes serum to flow out from the blood-vessel, but prevents the venous capillaries from absorbing fresh fluid to restore that which has been lost. Accordingly the author comes to the same practical conclusion, on this head, as that of Dr. Beale, viz. that the severity and danger of the choleraic attack are directly proportioned to the extent of intestinal surface which has become denuded. Tracing the process a step further backwards, he finds that the agent which produces the epithelial desquamation is the contact of cholera-stuff—*i. e.* decomposing fæces of a cholera patient—with the alkaline mucous membrane of the intestines, or with the similarly alkaline mucous membrane of the stomach in the states either of fasting or of gastric catarrh. But here he introduces an element of novelty. For whereas the general result of European experimentation has been to convey the idea that freshly passed cholera stools were not infective, Mr. Macnamara seems to say that practically they are so. His account of the process is this: Under the influence of the poison, the intestinal epithelium becomes invaded by a peculiar molecular disintegration, the new molecular matter constantly growing and increasing at the expense of the proper cell-tissues. The changed epithelium is thrown off in the "rice-water stools;" and if at this period it falls upon linen or any other substance where it can dry up, it may remain for years unchanged but still retaining its characteristic properties. These properties are, that on being subjected to the action of water and of moderate heat the molecular matter in the epithelial cells undergoes further changes, with the immediate result that

vibriones appear in the fluid in which they are suspended. The period of vibronic life lasts a longer or a shorter time, doubtless, according to the temperature of the atmosphere; in Mr. Macnamara's Indian experience it is in full action within twenty-four hours of the stools being passed, and it lasts till the third day, when the vibriones are replaced by ciliated infusoria. About the eighth day, or sooner, the infusorial forms have disappeared, bubbles of gas rise to the surface of the liquid, and confervoid growths line the sides of the vessel which contains it. Now, Mr. Macnamara expresses the decided opinion, which is very important if true, that cholera-stuff is absolutely innocuous when once the stage of vibronic life is over. He does not believe that vibrios or any other organisms are the *cause* of cholera, nor that their death *makes* the cholera-stuff innocuous; but simply that their death marks the finish of that period of molecular activity which is the essence of the contagion process. [It must be remarked here, that Mr. Macnamara evidently leans to Pouchet's side in the controversy concerning so-called spontaneous generation, He clearly seems to feel that there is no break, nor introduction of any new element, between the appearance of mere molecular matter in the intestinal epithelium, and the full development of unmistakeable organisms (vibrios) in the stools.] It is the process of molecular change which is contagious, and which has power to transfer itself from the epithelium of rice-water stools to the epithelium of the alimentary canal of those who swallow any portion of such stools. So far as we understand him, he believes that if a grain or two of cholera-stuff which has never yet exhibited vibrones be swallowed, and thus subjected to the moist heat of the alimentary canal, it will, unless neutralized by certain influences to be mentioned presently, develop the characteristic changes in the intestinal epithelium of the swallower, and regular phenomena of Asiatic cholera. Upon this part of the subject we cannot avoid remarking that the author makes statements of prodigious importance, for which he does not always produce evidence in such a detailed form as the gravity of the case demanded. For instance, in regard to the innocuity of cholera-stuff, which has completely passed through that state of change which is accompanied by the development of vibronic forms, he vouches for the facts on the strength of his personal observation; and we naturally expected this remarkable statement to be followed up by the records of definite experiments. But nothing of the kind is given, and we must say that the omission is a serious defect, though we must suppose that Mr. Macnamara did not speak without strong evidence. On the other hand, we are bound to say that he has added not a little, by his diligent observation of facts, to the solidity of the basis on which rests the modern

theory that cholera-dejecta are the only true sources of cholera-infection.

Upon the question of the cause of collapse, we think that Mr. Macnamara is successful in answering some theoretical objections which have been urged against the belief that this consisted in the loss of serum from the blood. He marshals in convenient order a series of recorded facts, which tend to show that the much-talked-of "rapid deaths from *cholera sicca*" are simply cases in which some three or four pounds of serum have been *rapidly* poured out into the intestines, and death has occurred from the shock, before any of this fluid could escape *per anum;* whereas in more ordinary cases, attended with purging, a much larger total quantity of serum may be lost, but so much more gradually that the element of nervous shock never (or much more slowly) assumes a fatal gravity. And we think that he makes an unanswerable objection to the basis on which Dr. Johnson's whole theory rests, when he points out that the latter has assumed, throughout his writings on the subject, that the primary cause of the phenomena of cholera is a poison acting within the blood (a theory which is necessary to account for the supposed spasm of the pulmonary arterioles,) and that such an assumption is entirely unwarranted by any trustworthy evidence that we possess. But we are inclined to think that Mr. Macnamara leans too exclusively upon the agency of mere loss of serum, for the explanation of collapse; for surely the denudation of a large intestinal surface must inflict a direct shock of the severest kind upon the nervous system, independently of the effects of the serous effusion. Moreover, as we shall presently show, there is more evidence in favor of the possibility of beneficial treatment through remedies partly, at least, addressed to the nervous system, than can be adduced for any other kind of treatment.

Intermediate between questions of pathology and those of artificial treatment, is the consideration of those means by which the healthy organism contends against the poison, when it has been unfortunately received into the body. On this point Mr. Macnamara's observations, though not strictly original, are very important. He insists upon the absolute necessity, to the infective life of cholera-stuff, of an *alkaline* medium; and upon the inevitable arrest of the molecular cholera process whenever the stuff is mixed with an *acid* fluid. What can be done outside the body by acidifying cholera-stuff with sulphuric acid or sulphate of iron, is often done inside the body by healthy *gastric juice*, which has the power of entirely and permanently arresting the activity of the molecular changes in the stuff, and thus rendering it harmless. In this way we can explain the vastly greater susceptibility of fasting men than of men with full

stomachs, to the evil effects of drinking water fouled with cholera-dejecta. And the deficiency of acid in the stomach secretion of those who from alcoholic intemperance, or other causes have become affected with gastric *catarrh*, may similarly account for the facility with which dissipation predisposes to attacks of cholera, when the disease prevails.

Upon the subject of treatment, as we have already remarked, the author has no very flattering tale to tell us, yet his remarks are full of interest. Of first-rate importance is his judgment on the "eliminative" treatment; for he was predisposed to think well of this plan, and he applied it on the large scale with enthusiasm, and with full understanding of Dr. Johnson's views. He declares that the mortality was frightful, and that he has completely abandoned the method. In fact he has been led by experience to resume the older and opposite practice of administering opium, at least in the early stage, before the occurrence of true rice-water stools. He gives half-drachm doses of the tincture after each liquid stool, and says that two or three such doses arrested the disease in a large number of cases, which he doubts not would have developed into ordinary cholera. [We may mention that Dr. John Murray's recent exhaustive collection of Indian medical opinions on the treatment of cholera. appears to bear out Mr. Macnamara's view on this point.] But he deprecates its use at later stages; and we are glad to see that he altogether rejects the routine use of calomel. He believes that that drug only does good as an *antiseptic*, by arresting the molecular action of the cholera-stuff upon the epithelium, and for this purpose he much prefers mineral acids. Of the great importance of these latter agents he is fully convinced; their theoretic value, as known arresters of the molecular movements which evidence the activity of cholera-stuff seems to to be borne out, to a large extent, by their actual effects as a remedy. Even in the collapse stage their partial employment is sometimes useful. They are never to be continued, under any circumstances, if they have once succeeded in rendering the stools acid in reaction. Another really practical matter is the employment of prolonged chloroform inhalation for the relief of *cramps;* it would seem that not merely is the patient saved an immense deal of suffering, but that an important economy of his strength is thus effected. Upon the use of alcoholic stimulants, Mr. Macnamara declares his opinion very distinctly; like opium, they are useful in the stage of diarrhœa *previous* to rice-water purging; in any later stage they are worse than useless. On the treatment of the reaction stage, the author makes no remark of consequence, except an indorsement of Dr. Francis' treatment of the suppression of urine, which occasionally happens, with tenminim doses of tincture of cantharides frequently repeated.

Upon a general review of the therapeutic portion of this work it is doubtless discouraging to see how little there is which indicates a positive and well-assured advance of our knowledge. Yet there are sundry items of information which taken together with our improved knowledge of the pathology of the disease, afford ground for not unpromising speculation.

I. Pathological knowledge seems to have reached a point at which we are justified in believing that the extent of the intestinal lesion—the amount, *i. e.*, of denuded mucous surface—is (if not the sole *cause*) the accurate *measure* of the gravity of the attack. If that be the case, the principal objects of the physician should be—(1) to neutralize the destructive agent which is attacking the intestinal epithelium, and (2) to mitigate the depressing effects on the nervous system (*a*) from the rapid loss of serum of the blood, and (*b*) from the centripetal influence emanating from the denuded mucous surface.

II. Though not certain, it is now highly probable that the active matter of cholera-contagion depends for its morbific power on molecular movements which, in common with a number of other motions of vegetative life, can be stopped by the contact of certain chemical and medicinal agents. This leads to the suggestion that every case of diarrhœa, occurring during the existence of cholera in a district, should from the first be treated by the use of the best agents of this class with which we are acquainted.

III. As regards the particular agent which may best answer this purpose, we are doubtless only on the threshold of the inquiry. The researches of Binz in an analogous field have proved that a large number of agents, including alcohol, quinine, opium, calomel, &c., possess the power of checking the vital movements of simple organic bodies. But the question in any case of practical therapeutics must necessarily be a double one; for there is not merely the consideration of the relative value of different antiseptics *quâ* antiseptics, but that of the possibility of bringing them into effective contact with the peccant matter without inflicting too much damage in other ways. It is a great thing, as a holdfast on solid fact, to know on the one one hand that both opium and acids belong to the group of agents which arrest the movements of low organisms, and on the other hand that after all the controversies that have passed, an immensely greater weight of experience testifies to practical good done in cholera by these remedies than by any others.

IV. There is, however, a different aspect of the subject which must not be overlooked, and which may possibly prove to possess far more importance than as yet appears, viz.: the degree to which the nervous system intervenes in the pathological process, and should be appealed to by the treatment.

That the nervous system is the seat of the primary injury, being poisoned by a specific cholera-virus introduced into the blood, is, we think, not merely unproved but unlikely, notwithstanding the opinions of some distinguished authorities. But it is not merely possible, but very probable, that the local mischief set up by the cholera-stuff in the epithelium of the intestines provokes reflex nervous action, which causes a great aggravation at least, of the malady. There is much reason to suppose that paralysis of a certain portion of the nervous supply to the intestines is itself capable of producing a large serous outpour from the intestinal blood-vessels. The question therefore comes in, under the head of treatment, whether it may not be as essential to interrupt the irritant effect upon the nervous centres, as to arrest the peripheral mischief which sets it up. It may be that the great power which opium seems to possess in the early stages of cholera is due in equal proportions to its antiseptic action within the alimentary canal, and its soothing influence upon the nervous centres.

At any rate it appears to us that the path of useful experimentation is opened in several directions. In the first place, it will be desirable to make fresh experiments on a very large scale in search of a first-rate *disinfectant*, in the proper sense of that word: viz, an agent which perfectly and permanently arrests all molecular changes that would otherwise reach a stage at which new living organisms are observed. Next, it ought certainly to be ascertained, without delay, to what extent mere paralysis of intestinal nerves is capable of producing epithelial desquamation and serous outpour. Further, we must search for new and powerful means of stimulating the spinal nerve-centres, in such a way as to enable them to resist the evil impression conveyed to them from the diseased surface of the intestine; and we cannot help thinking that here there is a large field of hopeful work before us. In particular we would suggest that the penetrating qualities of the constant galvanic current ought certainly to be tried for this purpose: there is the more reason for this that it might be applied in stages of this disease in which absorption of medicines is no longer practicable. On the latter point, however, we have a final word to say. From such inquiries as we have been able to make we do not believe that either here or in India the hypodermic injection of remedies during collapse was fairly tried; and, on the other hand, we have received a certain amount of positive evidence in its favour. It should certainly be made the object of a special and extensive research by the Indian practitioners at the earliest opportunity which presents itself.

Notes on Asthma; Its Nature, Forms, and Treatment. By John C. Thorowgood, M.D. Lond., M.R.C.P., Assistant Physician to the City of London Hospital for Diseases of the Chest, &c. London: Churchill, 1870. Small 8. vo. pp. 132.

This little book is a useful compendium of the author's considerable experience in the treatment of asthma; and although it makes no pretentions to the rank of a complete treatise on the disease, it will possess much interest for practitioners. The cases recorded range themselves in two divisions, those in which the disease is a pure spasmodic neurosis, and those in which neurotic asthma engrafts itself upon actual pulmonary disease, such as emphysema, chronic bronchitis, or a complication of these two.

A few words as to the author's pathological standpoint are necessary. He ranks himself with those who (like Dr. Salter) consider that tonic spasm of the *bronchial* muscles is the essence of the neurotic disease, sometimes ending in, or alternating with, a paralytic condition of the same fibres. He does not deny the possibility of its production by spasm of the *diaphragm;* and he allows that, in cases where the condition of the bronchial fibres is a paralytic one, the diaphragm is often in a similar condition. But on the whole his opinions directly contradict those of a large number of the best modern observers, who ascribe the principal share in the production of the paroxysm to a spasmodic or a paralysed condition of the voluntary muscles of respiration, especially of the diaphragm. We confess we are surprised at this. For our own part, the reading of Von Bamberger's able paper published in 1865 (*Würzburg med. Zeitsch.* vi. 1, 2) induced us to refer to a number of authors whom that writer cites in support of his own conclusions; and the result of this study, and of our own clinical observation since, was the conviction that for the vast majority of cases the hypothesis of an affection of the voluntary muscles of respiration afforded a much more rational explanation of the phenomena, than could be derived from the popular theory of a bronchial spasm. We think we may venture to say, also, that the most eminent recent authorities (with the notable exception of Dr. Salter) concur in thinking that the bronchial theory is not proven, and is unnecessary for the explanation of the facts; indeed, were this not the case, the eminent Paris professor of theurapeutics could hardly have used the confident expressions on this point which will be found in the final passage of his interesting article on "Belladonna in Asthma" (*Practitioner*, July, 1869).

Whatever criticisms, however, we may make on the details of Dr. Thorowgood's pathology, we concur entirely in the general conclusion to which he comes, that the whole group of neurotic

conditions capable of producing asthma—the spasmodic equally with the paralytic—are essentially conditions of debility; and to tonic agencies we must in all cases look for the basis of our treatment, sedatives being reserved for special emergencies. The speciality, indeed, of this unpretending volume is the confidence with which the author bears testimony to the efficacy of certain so-called nervine tonics; for although a general plan of tonic regimen has been frequently recommended as subsidiary to specific treatment, we doubt if any previous writer has advised the employment, as the main element of treatment, of such a remedy as strychnia and nux vomica, of which Dr. Thorowgood speaks in the highest terms. Arsenic, of which he also speaks very favorably, has indeed been a good deal employed; but those who have used it seem for the most part to have considered it necessary to account for its beneficial effects by calling it a "sedative." The merit of Dr. Thorowgood consists in his frank recognition of the fact, that nervine stimulants may be as useful in the treatment of *spasmodic* as in that of *paralytic* conditions—the difference between spasm and paralysis being far more in superficial appearance than in essential nature.

For the rest, Dr. Thorowgood does not neglect the use of more ordinary remedies, though we think he somewhat undervalues certain of them. In particular, we are disappointed that, in his estimate of belladonna, he does not inquire into the value of minute doses of atropia subcutaneously injected. He mentions the experience of Hirtz, but he does not seem to have followed up the valuable suggestions of that author. For our own part we are convinced that the wholesale condemnation, not only of belladonna, but of opium, which is frequently found in the pages of eminent writers, is due almost entirely to the fixed idea that these and similar substances must narcotise, whereas in minute doses, and especially when given through the skin, they are sedative precisely because they are stimulant and *not* narcotic.

Administration of Chloroform and Nitrous Oxide. By Charles Squarey, M.B. Lond., M.R.C.P., Assistant Physician to the Hospital for Women, &c. London: James Walton, 1869.

The author of this little work enjoyed large opportunities for the practical study of anæsthetics during three years, while he was resident medical officer to University College Hospital. He now presents to the profession a very convenient little pocket-handbook in which he has embodied certain practical hints which grew out of the facts that impressed themselves on his mind during his extensive experience. We do not quite agree with him on every point; but from personal experience we can testify to the general accuracy and great value of the little treatise which he has produced.

Livret Maternel pour prendre des Notes sur la Santé des Enfants (sexe féminin). Par le Professeur J. B. Fonssagrives (Montpellier). Paris: Hachette; Masson, 1869.

In this little pamphlet we see the first instalment of an undertaking which is ingenious and meritorious in a very high degree. Professor Fonssagrives is one of the most rising authorities on hygienic matters in France: and he carries an amount of intelligent enthusiasm into his work which ought to make him more than commonly useful to his generation. The idea in which his present undertaking originates is at once scientific and practical, and our only doubts are as to its feasibility until hygienic science shall have become more popularly appreciated than it is at present. He wishes to induce all mothers of families to commit a record of the health of their children, not to the treacherous keeping of their memories, but to the positive black and white of a tabulated document, with headings and necessary notes scientifically designed. The whole would then form a complete biological and pathological journal, of the utmost value as a book of reference when the medical man is called in on any particular occasion. We can only add that if Professor Fonssagrives' plan does not meet with practical acceptance it will not be the fault of the plan itself. The tables here supplied are such as it needs no technical knowledge to enable any moderately educated person to fill up: and a very small amount of labor would suffice for the registration of every fact that need be registered. For our own part we strongly recommend those benevolent ladies who are endeavoring to improve the intellectual and moral culture of their sex to take up this scheme, which is a good deal more likely to be of permanent utility to womankind than the grandest projects for conferring on them the right to the suffrage, and the *entrée* of the pulpit, the bar, and the College of Physicians!

A Contribution to the Physiological Study of Veratrum Viride and Veratria. By R. Amory, M.D., and S. G. Webber, M.D. Boston: David Clapp and Son, 1869.

This pamphlet is a reprint from the *Boston Medical and Surgical Journal*, and records some interesting researches by the authors, who are well known as experimenters on the physiological action of drugs. The essence of their teachings is as follows:—Veratria paralyses the spinal cord *or* the peripheries and termini of nerves, and, if carried far enough, extinguishes the vital functions, first of respiration, and then of circulation. They reject Prevosts opinion, that veratria acts directly upon the muscular tissues, through the blood-supply. They refer the salivation, vomiting, and increased intestinal excretion to the action of

the poison on the spinal cord, either direct or reflex. We must observe that we think their therapeutic conclusions are vitiated by an entirely unjustifiable assumption, viz.: that the effect of large and of small doses of the same agent cannot be different in kind. We believe on the contrary, that such differences not merely exist, but *are the rule* in the case of a great majority of all remedial agents whatever. At present, therefore, we can only accept Messrs. Amory and Webber's experiments as showing the toxicological relations of veratrum and veratria to the organism.

Letters on Vaccination. By Wm. Woodward, M.D. Worcester, 1870.

Dr. Woodward has done good service by reprinting these letters, which were originally published in a local newspaper, with the view of influencing public opinion on the Vaccination question. He gives a brief but telling sketch of the history of vaccination, and what it has done towards the diminution of small-pox, and the mortality therefrom. He dwells forcibly upon the necessity for an *efficient* vaccination, and also argues in a very sensible manner for the practice of re-vaccination. He shows indisputably, from statistical evidence, that vaccination is at least as protective against small-pox infection as small-pox itself, and he remarks that "to think it is useless being vaccinated because its good effects will not last an unlimited time, is, if I may be allowed the very common simile, the same in principle as the boy strongly objecting to clean boots on the ground that they would want it as badly as ever on the morrow." He gives the public a salutary reminded of the horrors (happily unknown at present in this country) which reign where the ravages of small-pox are not opposed by vaccination. And finally he goes over much the same facts as those which have been lately summed up in the *Practitioner*, and which form a complete and decisive answer to the fallacious and terrorising statements which have been recently revived, as to the conveyance of infectious disorders by the medium of vaccine lymph.

If it be true, as we have understood, that the local authorities of Worcester, like those of a few other towns, have been really wavering in their minds as to the advisability of enforcing the Amended Vaccination Act, we earnestly recommend them to study Dr. Woodward's clever pamphlet, which is unanswerable, and appears most opportunely. And we will add that it deserves more than a local circulation at the present time, when noisy and ignorant agitators are doing their best to induce a widespread distrust of the benefits of Jenner's great and most beneficent invention.

Clinic of the Month.

On the Action of Ipecacuanha.—In a communication made to the *Lancet*, Mr. Fuller states he was led by the recommendation of a friend to test the value of small doses of ipecacuanha, and that, although commencing this mode of treatment with the greatest scepticism, he has been led by frequent successes to believe in its efficacy in the following classes of cases:—1. In the vomiting of pregnancy, in which, after having given extended trials to a variety of remedies, as hydrocyanic acid, nitrate of potash, oxalate of cerium, opium, nitromuriatic acid, bismuth, alkalies, and quinine, and though each of these remedies was frequently useful, he is convinced they are all far inferior to ipecacuanha. The effects of this drug he considers to be conspicuous in the most severe cases, and it is able to control not only that vomiting which occurs on rising in the morning, but also the more severe forms in which the nausea, retching, and vomiting are almost incessant. In support of his statement, Mr. Fuller gives the details of two cases in which persistent vomiting occurred, and which were successfully treated by the patient being ordered to take a drop of ipecacuanha wine in a teaspoonful of water every hour. In one case after twenty-four, and in the other after eight hours' pursuance of this plan, the vomiting ceased, and the drop of the wine was then only taken when nausea supervened, which it immediately removed. 2. A second class of cases in which the ipecacuanha plan of treatment proves eminently successful is in the sickness and diarrhœa of children, which it speedily—when employed in the same doses—quiets and ultimately stops. Its use is indicated when the motions are frequent and slimy, and also when they are of a grass green colour, and it is also highly efficacious in this form of dysentery when unaccompanied by vomiting; but the presence of sickness may be accepted as a special indication of its usefulness. Mr. Fuller observes that, contrary to the experience of some, he has at present obtained no success from ipecacuanha in the vomiting of drunkards. (See *Lancet*, Dec. 4, 1869.

Treatment of Procidentia Uteri.—Dr. Gibson, in a paper read before the northern branch of the British Medical Associa-

tion, observes that, whilst the descent of the uterus is in the direction of the axis of the brim of the pelvis, the effects of the displacement are not usually severe; and in its progress in the direction of the axis of the pelvic outlet to a point beyond the vulval orifice, it is remarkable how frequently the procidentia is sustained without great injury to the health of the patient. Sometimes, however, even when slight, there is a considerable amount of suffering. So long as the course of the descending organ is in the line of the axis of the inlet of the pelvis, Dr. Gibson considers that no surgical operation at present recognised is required for its relief or cure; but when the descent is in the line of the axis of the outlet, and has reached or passed the vulva, the question of some surgical operation may reasonably be entertained. The slightest forms of the malady, like the most complete, are frequently associated with leucorrhœa and portal conjestion. For the removal of the latter condition he recommends, after judicious regimen, the agency of podophyllin, duly protected; of chloride of ammonium, with or without hydrochloric acid, or the latter drug in some bitter infusion with mild aperients. For the former, the removal of the conjestion on which it usually depends by sustained rest in the horizontal position, and astringent applications are indicated. The dress should be attended to, and all articles of clothing causing unequal compression of the thoracic and abdominal viscera prohibited. The abdomen at the same time, especially if pendulous, should be supported by a well-adjusted elastic bandage. Careful regiminal treatment and cold baths should be adopted, and sexual congress be rare. It sometimes becomes necessary to remove the hypertrophied condition of the uterus, whether this is the expression of *post partum* subinvolution or of chronic vascular engorgement, and for this purpose the ergot of rye is most efficacious, especially when supplemented by rest, frictions, cold injections, and sedatives. Beneficial effects may also be obtained from the iodide and bromide of potassium, iodide and chloride of iron, chloride of ammonium, and perhaps mercury. In the great majority of cases of procidentia uteri there is relaxation and descent of the *anterior* wall of the vagina above the highest point of its attachment to the uretha: hence the suggestion by Dr. Sims of removing portions of the mucuous membrane, and approximating the edges of the wound. The posterior wall of the vagina may be removed in the same way as proposed by Dr. Hewitt, but Dr. Gibson thinks neither of these operations advisable, being uncalled for when the procidentia is slight, and inefficient when considerable. Other operative proceedings are alluded to by Dr. Gibson as having been attended with very satisfactory results in other hands, such as the formation of an artificial hymen, the removal of the edges

of the labium, the incision being begun about an inch below the superior commissure on either side, and uniting in an arched form half an inch behind the frenulum; but his personal experience is adverse to the general adoption of these operations. He thinks they are by no means free from danger, and that they are rarely if ever necessary. Dr. Gibson holds that, even in very bad cases, a well-adjusted pessary will sometimes retain the uterus within the vigina; and he favours the employment of a procidentia truss, consisting of a band of elastic metal encircling the pelvis, which is bent downwards anteriorly and terminates in two digital processes, which have an action upwards, backwards, and towards each other. By the use of this instrument the vagina is supported by the intermediate agency of the vagina, and not by direct pressure on the uterus itself. (See *British Medical Journal*, Nov. 20.)

Treatment of Vaginismus.—Dr. Tilt deprecates the division of the vaginal sphincter for the relief of this distressing infirmity, and thinks the best mode of cure is by forcible distension. To effect this forcible distension he places the patient under the influence of chloroform, and then gradually introduces the two thumbs into the vagina. Placing them back to back he separates them more or less, according to each particular case, and thus forciby keeps the vagina distended for five or six minutes. He then introduces a large metal bougie, which is kept up by a T-bandage, and this may be worn with advantage for several days after the operation. Dr. Tilt considers that cases justifying a recourse to this mode of treatment are exceedingly rare, and that in most of the cases in which he has been consulted it has been a symptom of some form of uterine disease, or of vaginitis in very nervous women, and in these he has solved the vaginal spasm by curing the disease by which it was caused. Hence no kind of vaginal distension should be resorted to by the surgeon until he has convinced himself that there is no disease of the reproductive organs to account for the vaginismus. (See *Lancet*, Dec. 18.)

Treatment of Hysterical Aphonia.—Dr. J. Tanner observes that he has found this functional condition as little amenable to treatment as any in the whole field of medicine; but he has recently been so satisfied with the good effects of electro-magnetism applied to the *tongue only*, when used in conjunction with other remedial agents, that he is desirous of publishing the results he has obtained. He details a series of cases, and, summing up his results, states that it is all-important, before the electro-magnetism is applied, to convince the patient that she will be cured, since, if the powers of persuasion of the medical attendant fail, it is probable the effect will not be satisfactory.

Having placed the patient in an arm-chair, her head is firmly supported by an assistant, one handle of the instrument is placed in her hand, and when the mouth is opened and the machine in rapid action, the other handle is placed upon the tongue and pressed there; but the moment it touches probably the patient will scream violently, and she thus convinces herself and others who are present that her voice has returned. Care, of course, should be taken to ascertain by laryngoscopic examination that the aphonia is not caused by polypi, disease of the arytenoid cartilages, or other organic disease, and uterine symptoms if present should be treated.

Ether Spray in Cases of Hernia.—Mr. Marsh, of Littlemore, gives the following instance of the value of this method of treatment. A man, about fifty years of age, and insane, complained that his rupture was down. On former occasions it had been returned, though with difficulty, by the ordinary means. This time, being more refractory than usual, it became necessary to do something more. At Mr. Sankey's suggestion the ether spray was applied, with complete success. Under its influence the swelling steadily lessened, and the gut was returned by the fingers with the greatest ease. The man complained very much of the burning of the spray. This, Mr. Marsh thinks, might be counteracted, and the return of the protrusion aided by the simultaneous induction of partial or complete general anæsthesia. (See *Lancet*, Dec. 11.)

Treatment of Corns and Bunions.—Mr. Clarke, of Lynton, recommends for these painful and troublesome affections that the corns should be well soaked in warm water, then closely pared, and a compound galbanum plaster, spread on very thin leather, as an old kid glove, applied over the corn. This gives immediate relief, and may then be discontinued for a week or a month. The galbanum plaster of the London Pharmacopœia should be used in preference to that of the British, which Mr. Clarke has found to give pain. (Ibid.)

Use of Drainage Tube in Empyema.—Dr. Paley, of Peterborough, gives the details of two cases of empyema, in which the employment of the drainage tube appears to have been materially conducive to the recovery of the patient from this disease. The first was a case of double pneumonia complicated with pleurisy on the right side, supervening upon measles, in a child aged ten. After the attack had lasted a month, about four pints of thick pus were removed in the ordinary mode with a trocar. In ten days the chest was full again. A second was made on a level with the ensiform cartilage, and a little to the right of the nipple on the right side of the chest. After a pint of pus had been

discharged, a small india-rubber tube (such as is used for feeding-bottles), about two feet and a half long, and with a few small openings cut into it with scissors at the end, to be left in the chest, was introduced through the canula, which was then withdrawn. The tube was securely fastened to two pieces of plaster above and below the wound, the patient lying on the affected side. The lower end of the tube was placed in a basin half full of water, on a chair by the bedside, and kept under water by a weight. The tube was kept in for six days, and adequately fulfilled its purpose. After its withdrawal the wound was covered with a piece of wet lint, with oiled silk over it; small quantities of pus continued to be discharged by it for four months, and afterwards from time to time. Complete restoration to health followed. The second case was of similar nature, and was equally successful. (See *British Medical Journal*, Jan. 1, 1870.)

Empyema treated by Tapping and Blistering.—The following case may be advantageously compared with the preceding. The case was under the care of Dr. Andrew Clark, and the symptoms of effusion into the right side of the chest supervened on scarlet fever. The usual physical signs were present; the urine was smoky, and contained much albumen; specific gravity, 1015. The pulse was 160, and the respirations 36 in the minute; temperature about 102° F. The patient was first treated by the tincture of the perchloride of iron, spirit of nitric ether, digitalis, and bitartrate of potash, and for a time was put on a daily allowance of three ounces of gin. Slight improvement followed this treatment, but it was not permanent. On the tenth day the right side of the chest was tapped and forty ounces of purulent fluid withdrawn. Much benefit was obtained from this proceeding, but about two weeks after the old symptoms returned, with all the physical signs of fresh accumulation of fluid in the right pleura. A blister three inches square was applied over the seat of dulness. Under the repetition of this local treatment, and the administration of digitalis, bicarbonate of potash, iodine, and steel, and subsequently of cod-liver oil, the patient gradually improved, and was discharged quite recovered about six months after the original attack. (See *Lancet*, Jan. 1.)

Venesection in certain Affections of Heart and Lungs.—Dr. Sutton details a series of cases showing the advisability of venesection to relieve distension of the heart and passive congestion of the lungs; and in commenting upon them observes that they tend to teach that we may expect benefit from venesection where there is disease of the left side of the heart, great engorgement of the lungs, and distension of the right side of the heart; in cases where mitral or aortic valve disease is

causing distention and dilatation of the right ventricle, especially if the aortic disease is accompanied by acute bronchitis, or in lung disease, which is accompanied by great lividity of the face and distention of the veins of the neck, showing that the right side of the heart is distended. It would appear that in cases of mitral disease, where there is evidence of great engorgement of the lungs and of the venous system, bleeding ought to be more frequently resorted to; for although venesection may not benefit the patient for any great length of time, yet it will greatly relieve the distressing dyspnœa. It is well known that patients with mitral disease, sooner or later, frequently suffer from œdema of the lower extremities, from ascites, the veins of the neck become distended, the lips become livid, the face bloated and full-looking, and the complexion more or less yellow; the pulse is very small and feeble, and there is very great difficulty of breathing. These patients may have been benefitted by iron, by digitalis, or by mercury; but there comes a time when such remedies fail to relieve these distressing symptoms, and the breathing daily becomes more and more difficult, the pulse smaller and smaller. When the dyspnœa is urgent, ten or twelve ounces of blood may be taken from the arm, with the view of relieving the over-distended right side of the heart, the engorged lungs, and the over distended left auricle; and although the undue distension of these cavities may be only temporarily relieved, yet this relief may allow the muscular wall of the right ventricle, and probably of the left auricle, to recover some of their power, may enable them to propel the blood forward with greater force, and in this way make greater efforts to overcome and obstruct circulation in the lungs. Venesection is not here urged with a view to relieve congestion in the sense of inflammation, but simply to remove blood which is cumbering an over-worked organ, the right ventricle, of part of its work. The patient is no worse for the want of blood which cannot be passed through the lungs, and it proves that the circulation becomes more vigorous from the loss of a certain quantity of blood. Of course such a remedy can only be temporary; no kind of treatment can be expected to cure organic lesions from which dilatation results, and it follows almost inevitably that the same conditions will surely return. (See *Medical Times and Gazette*, Dec. 18, 1869.)

Uses of Carbolic Acid Oil.—Dr. Gibb, of the Monkland Iron Works, states that, following the recommendation of Dr. Jones Gee and others to sponge the patient with tepid water, and subsequently to grease the skin with mutton suet, in scarlatina, he has found the addition of carbolic acid, in the proportion of one to twenty of the suet, afford very considerable relief. In otorrhœa

he has found great advantage accrue from sponging the ear with tepid water, and carbolic acid one to forty, and subsequently dropping into the meatus a little of the following mixture:—Glycerine one ounce and a half, carbolic acid one drachm, sedative liquor of opium (Battley's) twelve minims. The fetid discharge is thus arrested. In throat complications he has obtained marked benefit from the use of Dr. Neilson's "inhaler," to the sponge of which is added a few drops of carbolic acid and Condy's fluid in equal proportions, requiring the patient to inhale the impregnated steam several times daily. As to the treatment of burns and scalds by means of carbolic acid, Dr. Gibb cannot speak too highly. In the Monkland Company's Works upwards of 1,600 workmen are employed, and burns are of frequent occurrence. He finds the addition of carbolic acid, in the proportion of one part to twenty of the ordinary carron oil, the best treatment, and adds one grain of acetate of lead to the ounce of lime water before mixing it with the olive oil. The plan he adopts is to saturate most thoroughly several sheets of ordinary surgeon's lint with the above mixture, and entirely envelope the parts; over this he applies a thick layer of cotton wool, which is removed every second day, to enable a further coating of the mixture to be applied to the lint, which he does not disturb, by means of a feather or fine brush. In one case the whole trunk was skinless; after the lapse of several days all the dressings were removed, and it was found that a new skin had formed. During all this time not a drop of pus could be detected, nor was any other unhealthy action present. (See *Lancet*, Dec. 11, 1869.)

Colotomy for the relief of Cancer of Rectum.—Mr. Curling gives some interesting particulars of a case of cancerous stricture of the rectum, in which the operation of colotomy was successfully undertaken, and the patient's life was prolonged for seventeen months. The patient had been under the care of Mr. Thompson, of Westerham, and appears to have had symptoms of his disease for three or four years. When seen by Mr. Curling, complete obstruction had existed for twelve days. The tongue was loaded, and he had lost his appetite; the pulse was good; the belly distended, but without pain. The indurated mass was of large size. Chloroform was administered, the colon found without difficulty, and not an ounce of blood was lost in the operation. Liquid feculent matter passed freely from the opening in the colon in the course of the day. A year after Mr. Thompson wrote, saying no trouble had been experienced in procuring evacuation of the bowel and there was little or no unpleasantness attending the act. He was in the habit of wearing a pad, a piece of sponge covered

with oiled silk, immediately over the false anus, covered again with a small piece of spongio-piline slightly wetted with carbolic acid lotion, the whole being kept in place with a stout belt. Tenesmus and discharges of blood-stained mucus from the rectum were readily controlled by the employment of suppositories of opium. Death was preceded by the discharge of a considerable quantity of blood by the anus. (See *Lancet*, Jan. 1, 1870,)

Successful Treatment of Chorea by Hydrate of Chloral.—Dr. Russell records a case of severe chorea occurring in an apparently healthy woman during the early months of pregnancy, in which chloral was used with remarkable results. The patient was quite unable to stand. The convulsive movements commenced in the left arm, and subsequently became general, ultimately affecting the eyes, the muscles of articulation and of mastication, though she retained the power of swallowing. Her sleep was much disturbed. She had never suffered from rheumatism. The first treatment adopted consisted in the administration of bromide of potassium, which proved an entire failure. The hydrate of chloral was then given, the patient taking seven doses in twenty-four hours, the first two of ten grains, the succeeding ones of fifteen. The first two doses procured some sleep; but after the third, the sleep became more continuous, lasting successively for three, five, and three and a half hours. Whilst she was awake, the movements, though occasionally violent, were much lessened, and she spoke distinctly. She was also able to protrude her tongue. She took liquid food. The patient now suffered a relapse, accompanied by pains in the uterus. Nutritive enemata were ordered, containing six grains of quinine and cod-liver oil, and two doses of laudanum were injected, the chloral being suspended. The uterine pain was removed, but the patient remained in a very excitable state. The use of the chloral was now recommenced, and with the best effects; she obtained long and refreshing sleep, and was able to take solid food. The remedy was employed for about ten days, and was then replaced by the tincture of hemp. After a few days the patient was discharged with only some slight symptoms remaining. (See *Medical Times and Gazette*, Jan. 8, 1870.)

Extracts from British and Foreign Journals.

On the Treatment of Varicocele.—Mr. Morgan observes that the vertical direction of the current of blood, especially on the left side, is the great difficulty to be contended with in this affection, and that the mere support of a contracted scrotum, effected either by the use of a flexible ring or by the removal of a portion of the scrotum, has not been found so successful as might have been anticipated, since the current is not materially influenced by these means, whilst the pressure of a truss, though retarding the blood-current, does not give any immediate support to the testis itself, and its use is frequently found to be extremely irksome and painful. The plan of suspension Mr. Morgan proposes, in the first place supports equally the testis and the distended veins, acting as an elastic stocking does to the leg; and in the second place allows an easy suspension of the organ. It brings the veins into an inverted position, and directly relieves them from over-distension, and the blood-current is more materially and effectually regulated, by doubling the vessels, as it were, round the abdominal ring. The apparatus suggested consists of a "suspender" composed of web, in which the testis is enclosed, having a piece of thick lead wire stitched into its free border. The sides are furnished with hooks, a lace, and a tongue of chamois leather, two tapes being sewn along the entire length of the web, which are afterwards attached to a suspending belt that passes round the waist. The apparatus is applied by the patient in the morning before rising and when the parts are relaxed, the organ being laid while in the dependent position in the "suspender," and the hooks laced up with a moderate degree of tightness, then raising it up and attaching the tapes to the suspending belt previously to rising from bed. During the first few days it should not be constantly worn, and the parts should be sponged night and morning with cold water. Mr. Morgan has found great relief from this apparatus in cases of specific orchitis, the testis being first wrapped round with lint steeped in tinct. opii. (*Dublin Quart. Journ.*, Nov.)

On the Cure of Phymosis by sudden Dilatation.—Dr. Cruise advocates the treatment of phymosis by this method, which he finds efficient, safe, and ready. He considers the success of the method depends upon the circumstance that the

contraction is usually situated in the mucous membrane of the prepuce, just at its junction with the skin. Consequently, when this contracted point is forcibly opened, the mucous membrane tears up, while the skin expands with the utmost facility. The operation may be performed with the ordinary dressing forceps, but Dr. Cruise prefers an instrument he has had constructed at his own suggestion. These are blunt pointed and bent at right angles to the handles. The blades open when the handles are closed. Attached to the latter is a little arc cut with a screw thread, and carying a moveable nut, which can be adjusted to regulate the extent of dilatation according to the requirements of the case. In order to calculate the amount of dilatation required, a loop of thread should be cast loosely round the penis at its thickest point, namely, at the corona glandis; the loop is then taken as a measure. Dr. Cruise proceeds to operate as follows: he commences by seeking out the preputial orifice, exactly where the skin and mucous membrane unite; into this the closed jaws of the forceps, taking care not to pass it into the urethra, are inserted; the handles are then suddenly and firmly closed. The mucous membrane tears up in the line of the axis of the penis, and immediately the foreskin may be retracted completely. The pain is sharp but transient, and is not followed by bleeding or other trouble. The only dressing needed is a strip of lint moistened with water or other lotion, which should be wrapped round the part so as to retain the foreskin retracted and cover the wound. Dr. Cruise remarks that this plan of treatment is best adapted for simple uncomplicated cases; that it is requisite to dilate fully, and that the subsequent retraction of the foreskin should be maintained for at least from twenty-four to forty-eight hours. (*Dublin Quart. Journ.*, Nov. 1869.)

Employment of the Acid Nitrate of Mercury in the Treatment of Secondaries.—Dr. C. E. Lyster states that he has been for some years in the habit of freely using this remedy, in a greatly diluted form, as a local application to secondary and tertiary syphilitic affections, with considerable success. He finds it pre-eminently useful in secondary ulcerations of the throat, in which class of cases he has succeeded in obtaining a cure, without the employment of any specific constitutional means whatever. He has also found it very valuable in tertiary ulcerations of the tongue, and lastly in syphilitic sores in any part of the body, more especially when the result of rupial affections. In cases of throat affection he commences the treatment by freely mopping out the parts with the solution properly diluted, and until lately he has directed the constant use of a gargle in the proportions mentioned below; but since the intro-

duction into practice of "pulverized fluids," he has chiefly applied the remedy in that form, as being not only more effectual but less irksome to the patient. Care is necessary in graduating the strength of the solutions used: when intended for application to the throat or tongue, either as a gargle wash, or in the form of spray, Dr. Lyster invariably commences with one minim to the ounce, very gradually increased to two or even three minims. Employed in these proportions patients rarely complain of any annoyance. In one or two instances, however, it was found desirable to reduce somewhat the strength of the solution, and even to discontinue its use for a day or two. When the throat is mopped out by the practitioner, a much stronger preparation may be used, containing one or even two drachms to the ounce; and if the ulceration is deep, or of phagedænic tendency, a still more powerful application—half an ounce of the nitrate to one ounce of water—may be used, but this is rarely necessary. When applied to syphilitic sores on other parts of the body, he has found a lotion composed of half a drachm to one ounce the most generally useful. Dr. Lyster, however, now rarely employs the acid nitrate of mercury as a caustic, the strong nitric acid being both more efficient and less painful. (*Liverpool Medical and Surgical Reports*, 1869.)

Iodine as a Remedy for Vomiting.—Dr. Caspary remarks that Rademacher was the first to apply iodine for the above purpose; he gave a dessert-spoonful hourly, of a mixture of thirty drops of the tincture with half an ounce of water, and a little tragacanth. Dr. Bierbaum recommended iodine in the obstinate vomiting of typhilitis stercoralis. Caspary says that iodine not only checks vomiting, but also quiets pain, and is a good palliative and indurative disease of the stomach. If the vomited matters are very acid, carbonate of ammonia, as recommended by Rademacher, should be given first, in small doses, for a time; or in cases of heartburn and eructation probably depending on intemperance, carbonate of magnesia should be exhibited. (*Der Praktische Arzt*, Oct. 1869.)

Soluble Saccharated Oxide of Iron as an Antidote to Arsenic.—Dr. Köhler, of Halle, remarks that the long known antidote, *hydrated oxide* of Iron, has many practical inconveniences. The preparation now recommended only differs from the latter in containing a larger proportion of water (as hydrate). Köhler used it with remarkable success in the case of a young man who had swallowed thirty or forty grains, or more of arsenic. He comes to the following general conclusions about this new therapeutic agent:—(1) That it precipitates arsenious acid from solution in the form of insoluble arseniate; (2) That on chemical grounds it should be justly substituted for the ordinary

hydrated oxide as an antidote; (3) The experiments on animals fully bear out its practical efficacy; (4) That while in other forms of metallic poisoning (especially with common sublimate) mechanical antidotes like albumen, &c., are useful, the latter treatment is only a hindrance to the efficient application of the oxide of iron in arsenical poisoning; (5) That the iron treatment should *not* be accompanied by the use of neutral purgative salts, otherwise the antidotal combinations may be interfered with; (6) Since Schroff has proved that the arseniate of iron itself is always absorbed in minute quantities, emetics should be administered as soon as the antidotal combination of the iron with the arsenic may be supposed to have taken place; (7) As to the quantity of saccharated oxide of iron required to neutralize a given quantity of arsenic, it appears that about ten or twelve parts of the oxide should be administered for every one part of arsenic believed to have been swallowed. (*Berlin Klin. Wochensch.* 1869, 35, 36.)

On Cauterization of the Neck of the Uterus.—Some months ago an account was given in the *Lyon Médicale* of the practice adopted by M. Mauny de Mortagne for the cure of the vomiting of pregnancy, when this exceeded certain limits and became a serious symptom. M. de Mortagne cauterized the cervix uteri, both with the nitrate of silver and with the actual cautery. Still more recently, a paper appears in one of the medical journals of Toulouse, by Dr. Villard, who, holding the views of Bennett, on the frequency of abortion caused by ulcerations of the neck of the uterus, recommends that the treatment should be pursued even during pregnancy. By the appropriate treatment of ulcerations, granulations, or fungous growths of the cervix occurring on the neck of the uterus during pregnancy, we remove a determining cause of abortion, and a cause too which increases and develops proportionately to the advance of pregnancy. To cauterize these organic growths, and especially to cauterize them with the actual cautery, is in point of fact to replace a disease which tends slowly to progress, for one which rapidly disappears. In support of these theoretical considerations, the author reports three cases in which cauterization produced a cure of the affections for which it was employed, and in no way interfered with the progress of gestation. These women had previously suffered from one or several abortions. If to these observations we add those published by Roberts, Boys-de-Loury, Courty, and others, we have sufficient evidence of the utility of this procedure. (*Revue Médicale de Toulouse*, Nov. 1869.)

Notes and Queries.[1]

A New Liquor Ergotæ.—Mr. Edward Long, of Dublin, has devised a new preparation of ergot which appears to have some advantages over any previously existing form of the drug. He started from the principle that water is the best extractor of the virtues of ergot yet found, and conjectured that *glycerine* would probably take up the same soluble ingredient. He digested ergot, freshly powdered, in glycerine for ten days, frequently shaking it; on then straining, the liquid was found of a deep purplish color, nearly as thick as treacle; the marc was quite soft and pulpy. This marc was digested in spirit for ten days more, pressed off and filtered, and the resulting tincture distilled off till it became syrupy, and then added to the previous solution.

The "fluid extract" thus formed equals in volume the quantity of glycerine originally employed, and each drachm represents half a drachm of powdered ergot, and may be considered a dose, for midwifery purposes. It is obvious that if the inventor's expectations of its efficiency be realized, there will be great conveniences in the employment of this new preparation. The practitioner will be able to carry with him to every midwifery case a little bottle holding a few drachms (and marked off into drachm doses), which will be ready for immediate use, whereas at present there is no way of getting certain effects except by the rough and disagreeable process of making an infusion of ergot on the spot. Moreover the latter preparation is extremely nasty; but Mr. Long's extract is sweet. He supposes that it will keep perfectly well. The profession are invited to make trials of this new preparation; and we shall be very happy to record any experience which any of our readers may have met with in its employment.

Similia Similibus.—We have received from Dr. Marston, of Devizes, a letter on this subject, which we somewhat incautiously

[1] The Editor, being desirous of making this department a useful medium of communication between practitioners, will be glad to receive short notes on theoretical or practical points in therapeutics,—brief jottings on those numerous queries which suggest themselves from time to time to a medical man as he "goes his rounds," but which he has neither the time nor, in some cases, the opportunity of answering. The Editor does not pledge himself to reply to every question addressed to him, but he hopes to make the "department" the means of supplying the information required; and this he can only effect by the hearty assistance of his readers.

promised to insert and answer. We redeem our promise, though the letter is terribly lengthy, but must add that we cannot continue the idle business of slaying the already slain. If the note which we append to Dr. Marston's letter fails to convince him of the anachronism of such doctrines as *similia similibus*, we can only say—let him be unconvinced still. The letter is as follows:—

December 16th, 1869.

Sir,—Having been in the habit during more than ten years of using ipecacuanha in certain kinds of vomiting, permit me to add my testimony to its value.

Drs. Ringer, Phillips, and Hughes have so fully defined what in my own experience, I have found to be the true range in which this medicine acts, that I need not do more than add, that in that kind of vomiting occurring in what is called *sick headache*, and where the sickness is the most prominent symptom, it is invaluable, and that not only in the sickness of pregnancy, but in the vomiting arising from other sources of uterine irritation, I have found it very effectual. I have at present under care a case of fibroid tumour of the uterus, in which the symptom frequently occurs, and in which it is invariably arrested by the ipecacuanha. Will the Editor of the *Practitioner* oblige me and some others of his readers with a fuller explanation of his views on two important assertions made in the October, November, and December numbers of his much-valued periodical?

1st. He observes that there is no such things in existence as a *similarity* or a *difference* between drugs and diseases. Do not drugs produce, physiologically, certain abnormal conditions, and is there in no case any resemblance between the conditions; which drugs are capable of producing and those which are caused by disease? To the case in point—is there no similarity between the effects produced by full doses of ipecacuanha and that effect of disease which it is affirmed to relieve? Is there no similarity between the effects produced by even ordinary doses of colocynth and some kinds of diarrhœa? And may not such questions be extended almost *ad libitum?* May I ask further on this question, whether the learned editor of the *Practitioner* has any principle to propose on which he would advise that medicines should be selected?

It seems to have been generally admitted that two things are necessary to make a *scientific* practitioner. 1st. Correct pathological knowledge; and 2ndly, a knowledge of the physiological action of drugs: but if no principle exist on which such knowledge when possessed can be applied, of what avail is the knowledge itself?

While strongly opposed to all sectarianism in medicine, I must

confess my own belief that the doctrine of similars is sufficiently true and capable of a sufficiently wide application in medical practice to render it a very available and valuable, though not an exclusive guide in the selection of remedies; but if any principle capable of a more extensive application, or more effectual in practice, can be established, I will willingly accept it; the work of a physician is not to maintain a dogma, but to heal the sick.

2ndly. The Editor expresses his thorough disbelief in *specific* remedies.

Again I ask, in no litigious spirit for an explanation of the sense in which he uses the word "specific." If he mean to object to the idea that remedies exist which will infallibly cure disease, bearing certain names, I at once join him in his objection; but if by the term "specific" is meant such a definite relationship between a diseased condition to be treated, and a drug administered in the treatment of that disease, so that the former being ascertained the latter shall be indicated as the most appropriate remedy, it appears that, whatever principle we may adopt, the discovery of such relationship is the sole aim of medicine considered as a science. I venture to believe that it is in this latter sense Dr. Hughes uses this term, and if this use of the term be objected to, I see not how we can prescribe at all on any *scientific* principle; for how can a physician prescribe for a disease unless he believes that the medicine which he prescribes has some such relationship with the condition for which he prescribes it? He may be an allopath, a homœopath, or one simply guided by the experience obtained *ab usu in morbis*, but unless in this sense he believes in the specific (or particular) action of the remedies which he prescribes, upon the (particular) condition of the patient for which he prescribes them, why does he prescribe them?

As I read in each number of the *Practitioner* the very practical papers with which it abounds, what can it profit me if the remedies specifically recommended have no sort of definite connexion with the conditions of disease for which they are recommended? I take it that the Editor simply means to condemn the use of the term in the more popular sense of that term; if so, he has only to turn to the literature of the homœopathic school to find how completely that school is at one with him. It is not within the limits at first proposed by me, but, pen in hand, I can scarcely forbear an allusion to the statement that both allopathy and homœopathy are founded upon ignorance of the different effects produced by large and small doses of the same drug. Has the Editor ever read Dr. Reith's papers on this subject in the *Edinburgh Medical Review*, and has he ever become acquainted with the result of the

investigations, viz. a rediscovery, as it were, of the doctrine of similars?

The time has surely come when sectarianism in medicine should come to an end.

A belief in the doctrine of similars, or a belief in the doctrine of differences, or a belief in no doctrine at all, ought not to separate, the one from the other, honest and diligent searchers after truth. Mutual intercourse and friendship would serve to moderate the extreme views of parties, and each would learn that the whole truth rested not with himself.

I am, Sir, yours obediently,

C. H. Marston, M.D.

Upon this letter we observe as follows: 1. We repeat that any imagined "resemblance," or "opposition," between diseases and the action of drugs must be delusive, because it will always be based on an arbitrary selection of one or more symptoms as typical of the disease. Thus, *e.g.*, ague has to be looked on as a periodical shivering and flushing disease, and cinchona is supposed to be a "similar" to it because a few persons have shivered when poisoned with bark or quinine. 2. The reason of our disbelief in "specific" remedies is this: that diseases themselves are not specific *i.e.*, that apart even from the fact that such a disease as pneumonia may depend upon a half a dozen different constitutional states, or diseases of other viscera, the individual constitution of each patient is so important a factor in the business as to upset all therapeutic calculations based on abstract theory. 3. The principle of therapeutic investigation which we uphold is clear enough. Let us confine our *scientific experiments* to the case of those diseases whose pathology is most intimately known; and then let us select our experimental agent *not* because poisonous doses of it can cause such and such symptoms in the healthy subject—a fact which taken alone is utterly irrelevant—but because our knowledge of its chemical and physical properties leads us to suppose that it will supply some element, either of material or force, which is obviously deficient. And in the case of the emergencies of practice, where we must act, sometimes, without any scientific knowledge of the *essential nature* of the effect we ought to produce, let us be frankly empirical, and not confuse ourselves with theories whether homœopathic or allopathic.—Ed. Practitioner.

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[1] Any of the foreign works may be procured by application to Kelly, Piet & Co., Booksellers, Publishers and Importers, 174 Baltimore St., Baltimore.

THE PRACTITIONER.

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THE TREATMENT OF THE TINÆ, OR RINGWORMS.

BY TILBURY FOX, M. D., LONDON.

Fellow of University College, Physician to the Skin Department of University College Hospital.

THERE are few who will refuse, on reflection, and especially after an appeal on the question to most text-books on skin diseases, or even the actual practice of the several dermatological departments at the different London hospitals, to admit that the treatment of the various forms of tinea, or ringworms as they are generally called, may be fairly termed purposeless. The mere enumeration of parasiticides on the part of writers on cutaneous medicine, or the trusting to some favourite panacea for ringworm, takes the place of the definition of, or guidance by, the principles, as the case may be, upon which the treatment for that disease should be founded. This should not be, considering that we are so well acquainted with the cause of tinea. If I am not justified in using the term purposeless to our treatment of the different kinds of ringworm, at least I may substitute for it those of slovenly and empirical; for, absorbed as most of us are with the one idea of killing the parasitic spores and mycelial tubes with some outward application, we take about as little notice as is possible touching the kind of soil in which the fungus luxuriates; of the means to be adopted to alter that, so as to

make it cease furnishing the suitable pabulum for the parasite; of the mode in which we can gain the best access to the fungus-germs, in the handling of some remedies; of the mode in which we can readily stay the spread of disease or the cropping up of fresh points of mischief by the dissemination of the fungus elements; and of the acts to be avoided, lest we possibly retard rather than aid the cure. I propose to sketch the principles which should guide us in our treatment of the tineæ; to point out briefly the reasons for employing particular remedies, and in certain modes and amounts rather than others.

Principles of Treatment.—Fungi are the true cause of the lesions of the hair and epithelium—viz., the dryness, the brittleness, and the loss of the former, and the disturbance in the growth of the latter—found in and characteristic of the tineæ. But fungi do not flourish upon healthy surfaces. This is a great clinical truth. Those upon whom fungi luxuriate possess, speaking in general terms, the lymphatic temperament; or, as I prefer to put it from a therapeutical point of view, persons attacked by ringworm assimilate very tardily, and are deficient in, fatty matter. It follows then that our main object in the treatment of the various forms of ringworm is to destroy the fungus, and starve it out as far as possible by altering the soil in which it flourishes. I may remark here that time alone may in some cases work a cure, and this is to be accounted for no doubt in great measure by the alteration induced in the solids and fluids of the body during the interval between attack and cure; but the latter is a very slow affair indeed. Further, the varieties of tinea—that word being used, at my suggestion, and adopted by the College of Physicians as the generic term for vegetable parasitic diseases of the skin—are: tinea favosa, t. tonsurans, t. sycosis, t. circinata (ringworm of the surface of the body), t. kerion, t. tarsi, t. versicolor, t. decalvans, and onychomycosis. But the fungi found in these several varieties belong, as I have long stated, to one species; consequently, as regards the mode in which fungus diseases or parasiticides operate in each case, there is no difference, and the same parasiticide, *cæteris paribus*, acts equally well in either of the tineæ. What I mean by this is that we need not seek for different applications in the several tineæ, because

therein exist parasites which vary in nature or species. The propositions above enumerated imply the need of both general and local remedies. This is a rule which, however, has its exceptions. Occasionally the application of parasiticides suffices at once to exterminate the fungus and to remove the disease. But this happy result takes place only in cases of ringworm which are of recent origin, or, in other words, in those instances in which the parasiticide can gain ready access to the fungus elements, when these latter have not made their way far down into the hair follicle. When the vegetable parasite has reached the bottom of the follicle, and got to the papilla, then it is a difficult matter to bring the destroying agent into contact with it, and it becomes a point of supreme import to do what we can, by internal means, to change the supply of pabulum which suits its free growth. We conclude then that in all but the most recent cases, for the treatment of all forms of ringworms or the tineæ, general remedies are needed to alter the soil, and local parasiticides to destroy the fungus. The growth of the fungus in a tinea leads, as a final result, where the hairy parts are attacked, to baldness and irritation of the scalp, and the application of parasiticides requisite to destroy the fungus often seriously disturbs the nutrition of the affected part, and leads to eruptive manifestations, folliculitis, œdema, and the like. These and like changes may be termed the consequences of the real disease. Hence we advance a step further and say that we have to *alter the soil, to kill the fungus, and remedy the consequence of the parasitic attack.* And under these three heads I shall proceed to give further details.

(a) *General Treatment.*—Most cases of ringworm of course occur in children—I suppose it will be allowed—in such as are of a lymphatic temperament, in those markedly strumous, or who are thin, fair, and pallid. Even in the instances of children with dark hair, some of the evidences, of a lymphatic temperament are not wanting. What I particularly wish to emphasize here is the fact that in very many instances children attacked by ringworm will be found to have been in the habit of taking very little fatty matter, or, if taking it, to have assimilated it badly. Mothers and nurses will, in reply to questions, state that this or

that child will never "touch a bit of fat," and the frequency with which the fat of meat is scrupulously avoided has long struck me as a remarkable fact. But supposing children do eat fat, we often can readily explain why it is not assimilated; the stools are pale or clay-coloured, the digestive act performed with difficulty or discomfort, and the tongue is pale, the urine loaded, and headache is frequent, and soon there are symptoms that point to an inactive liver and scanty biliary secretion, in connexion with which deficient absorption of fat from the intestinal tract must be associated. As a point of practical importance, then, I find it of the greatest service to recognise, over and above the propriety of removing anæmia, debility, and other causes of weak health, the peculiar necessity for exhibiting to children attacked by ringworm a large amount of fatty matter, if not in the food, at least in the shape of cod-liver oil, and of preparing the way for its due assimilation by removing dyspepsial conditions and hepatic torpor. The conjoint exhibition of alkalies and bitter tonics is under the latter circumstances most useful. This line of treatment is emphatically called for in tinea favosa and tinea tonsurans. In the former disease it is important to review the general nature of the diet, and to increase its meat and milk items when deficient in amount. Fresh air, extreme cleanliness, and the other hygienics are also requisite. If there be conjoined to ringworm a tendency to or actual eruption, and the latter be scaly, or the attacked present the nervous temperament, arsenic and iron in combination may be given, but I still prefer the cod-liver oil. Let me repeat that this often fails to do good, or is tardy in so acting, if we omit to put the digestive organs into due working order so as to assimilate it. In tinea circinata, or ringworm of the surface,—and this includes erythema circinatum, eczema marginatum, the so-called herpes circinatus furfuraceus, &c.,—general remedies may be called for, if the disease is chronic and there be many spots here and there scattered over the body. Here I do believe arsenic acts very well internally in aid of local measures; there is clearly a condition of nutrition oftentimes very favourable to the rapid development of the mycelial threads of the trichophyton vegetation which is negatived by a course of arsenic. It would seem as if the nutrition of the skin were altered rather by a want of nerve tone than

aught else, and for that reason the arsenic acts well; in other cases the supply of fat, alkali, or large doses of the mineral acids may be preferable if the strumous tendency is decidedly marked. In times sycosis—a rare disease, and one which must not be confounded with the very common one of simple inflammation of the follicles of the beard—little can be done by internal remedies. Now and then the affection occurs in a markedly strumous adult, and here the indication is clear. But in other instances dyspepsia of a chronic and indolent kind may be present requiring its appropriate treatment. I am not certain that good results do not follow the use of the bichloride of mercury with bark, or the bromide of potassium in connexion with local measures where there is much induration. Tonics, however, always do good. In tinea decalvans, beyond the dilute mineral acids, quinine and strychnia (the latter in elderly subjects,) nothing is called for. We now and then hear that arsenic has done wonders, but I do not believe that it has any special effect in destroying the fungus. In adults worry and dyspepsia sometimes aggravate tinea decalvans, and these must be remedied. Tinea versicolor, or chloasma as we in England term it, is always removed by local means alone. The contrary is sometimes stated, but stated, so far as my experience goes, upon very erroneous data. So far for general treatment.

(b) *Local Treatment.*—Let me try and state as briefly as I may be able the objects to be attained—for they are not one, but several—in our local treatment, and the reasons which lead us to adopt certain means of attaining these objects, and the mode of employing these said means.

Firstly. We must whenever a case of ringworm affecting the hairy parts comes under our notice, remove every particle of hair that prevents our obtaining a clear view of the diseased spot. I think it safest to do this in all instances even where the places are tiny and recent ones, and for the reason that our remedies should be applied to the apparently healthy surface for a certain distance around the actual diseased-looking place, because the germs of the fungus invade freely before evidencing their presence by actual irritation and redness. Frequently fresh spots spring up unobserved, and get ahead, in the immediate neighbourhood of small spots, and also in other

parts. It is important therefore to determine how long a disease has existed when it first comes under treatment; if it be only a week or ten days, we may hope that no spread has taken place from the original spot, but if it be an old affair, and the nurse or other person in charge have observed two or three places here and there dispersed over the scalp, and other children have the ringworm as well, and especially if the disease be rapidly increasing and severe in the few spots that exist, I believe it is the wisest plan to take the scissors and cut the hair off close to the scalp, save about the front and back, so as to leave the appearance of a band of hair when the cap or hat is on the head. It is not so necessary to crop off the hair in tinea decalvans, because the loss of hair is so conspicuous that it at once indicates the seat and extent of disease; but the same rule as to the necessity of using remedies beyond the limit of the apparent disease is doubly needful in this variety of tinea. Well, having cut short the hair, we are enabled to see the contrast at once between the upright and shining hairs of health with their connected healthy scalp, and the dull, brittle, twisted and broken off hairs and the scaly or inflamed scalp of disease. If there be much crusting as in favus, or scaliness as in tinea tonsurans, we have recourse to cleansing by poulticing and rubbing in oil, and then we may, to destroy the fungus germs free about the service, keep the scalp bathed in a solution of hyposulphite of soda ʒss to ʒvj of water, or sulphurous acid one part to four or six of water. In this way in a couple or three days we have a perfectly clean surface, and we can then see the exact extent of disease in contrast to the healthy parts, of course. In the slightest cases, and in ringworms of the non-hairy parts, this preparation is needless, save, as before observed, in regard to clearing the hair away from actual diseased spots.

Secondly. We should take measures to prevent the dissemination of the disease from spot to spot by the transplantation of spores and spore tubes. This is effected by observing scrupulous cleanliness, by using parasiticides to the whole scalp if the disease is severe, and by oiling the scalp also. The collection of scales must be prevented also. I am in the habit of telling nurses or parents to care for these cases of ringworm thus. The parasiticide application is to be applied say twice

a day; that is, in the morning, after the head has been carefully cleansed and washed with soap and water, and at night. After each time of using the parasiticide the scalp should be pomaded over lightly, or covered with rag wetted with a solution of the sulphurous acid or the hyposulphite of soda. Ordinary oil or pomade may be quite as efficacious in some cases, provided it be fairly applied so as to grease the scalp.

Thirdly. We should in marked cases get away as much of the fungus as we can, and that bodily—bodily with the hair, where that exists, and when it is loaded with the fungus germs. This leads us to the question of epilation. Now in the three tineæ which attack the scalp—t. favosa, t. tonsurans, and t. decalvans—epilation is called for. This statement is in contradiction to the general teaching on the subject, but I know that it is true. In favus the application of parasiticides must go hand in hand with epilation, an inch or more of the scalp being cleared of its hair each day. In tinea tonsurans many of the hairs are brittle, and break away when we attempt to pull them out; but many others are actually removed, and the attempt should be made to get as many away as possible, and as in the case of favus a certain area should be cleared each day, parasiticides being used after each sitting. I feel sure that a very erroneous idea is abroad that epilation is useless in tinea tonsurans. If the hairs are not very loose, and the epilation gives rise to pain, it is then advisable to rub in the oil of cade freely, once or more, or to blister the diseased spots, when the hairs are loosened and can be readily extracted. But it must be remembered, both in favus and tinea tonsurans, that some of the fungus elements may be left behind in the follicle, and growing up into the hairshaft leads to disorganization of the hair; under these circumstances the hairs must be again removed by epilation. In tinea decalvans we often see short, club-like broken off hairs around the extending edge of the disease; these are to be carefully extracted, for they contain the fungus elements. They are almost invariably overlooked. In tinea sycosis epilation is absolutely needed. It is very important indeed, I think, when tinea tonsurans is in progress, to remove the short dark stumps of hair which sometimes abound over the diseased patches. These stumps have loosened their attachment to the papillæ, and are like so much

dead matter upon which the fungi luxuriate. They are always loaded with spores of large size, and are as so many laboratories, capable of disseminating the germs of disease far and wide. What we need to do in addition to killing the actual fungus is to prevent its re-growth in the part from whence it has been exterminated. But, speaking of epilation as a whole, how long or how many times is it to be repeated? The microscope and the general aspect of the disease must guide us. If the hairs which spring up over a patch look diseased; if they are brittle and loaded with spores; if the formation of the root-sheath of the hair is destroyed and the root itself be invaded by the fungus, then we must epilate and use parasiticides again—it may be twice, it may be three times. This brings us, fourthly, to *the use of parasiticides*. Where the disease affects the general surface of the body, we at once start in the treatment with these remedies: but where the hairy parts are implicated, save in the slightest cases, the employment of the preparatory measures above described is requisite. Now there must be some distinct principle upon which we should use these agents. Our object is to bring them into contact with the parasitic elements, and this in the slighter forms of disease is readily done by friction, or by using, as a *medium* for their exhibition, some fluid that penetrates the tissues. In severe and long-standing cases epilation is absolutely needed to be practised so as to clear away the plugging up of the follicles by the diseased hairs.

Taking the general run of cases, I think the lesson we need to learn in regard to them is the use of friction, with ointments of a weakish description *quoad* the parasiticide with epilation when this is called for, rather than the application of strong and active remedies; at least I have seen many bad results from the too free and too frequent use of strong and perhaps vesicating parasiticides. If we employ the latter, it should be *occasionally* but *effectually*. I have had under my care cases in which the greater number of the follicles of the scalp have been inflamed simply from the use of strong remedies repeatedly applied; sometimes there has not been a vestige of fungus present, the inflammatory state of the follicles being taken for an aggravation of the tinea; microscopic examination should have settled the difference in a moment. Let me take the varieties of ringworm in

detail, and the simplest first. Chloasma: this is very easy of cure by the use of a lotion of ʒ ss of hyposulphite of soda in ʒ vj of water. The skin should be first washed with yellow soap and water, and the lotion at once applied—the parts being frequently dabbed with it. The lotion should be continued for some time, a fortnight in severe cases, after the eruption has disappeared. The use of the soap and water is to get rid of the natural fatty matter, so that the watery lotion can act efficiently. It is a good plan to sponge the skin just before using the lotion with a little weak vinegar. If the tinea versicolor be very old and extensive, it may be advisable to soften up the desquamatory patches by rubbing on a little liquor potassæ. I have cured cases at a sitting by the use of liquor potassæ first, and then a strong sulphurous acid lotion.

Tinea circinata is an easy affair to cure. A solution of caustic in the spirits of nitre ether—in the proportion of two scruples to an ounce—or even tincture of iodine, or ascetic acid applied once or twice, will frequently suffice. I prefer the use at the first of Coster's remedy; that is to say, a drachm of pure iodine dissolved in an ounce of oil of petroleum, or oil of tar, to be followed after the clearing away of the scab which forms—that is, in two or three days—an ointment of ammonio-chloride of mercury, from ten to thirty grains to an ounce.

In the case of so-called "eczema maginatum," which affects the inner and upper part of the thighs, I use a washing with soft soap, and the use of hyposulphite of soda lotion, or an ointment of bichloride of mercury four to six grains, and creosote three or four drops to the ounce of lard. But I lay great stress in all these cases on the removal of the normal fatty matter by soap before using parasiticides, if in solution.

Birmese ringworm, which affects the pubes, the axillæ, and other parts, often appearing as raised erythematous circles in connexion with what might be termed erythema circinatum about the body, is best cured—and I have had several bad cases of the kind—by the repeated use, four or five applications, of the iodine and tar application before referred to, using at the fag-end of the treatment an ointment of the pyro-ligneous oil of juniper and ammonio-chloride of mercury. In true parasitic sycosis epilation is called for, and then a para-

siticide may be used at the same time. I know nothing better than the bichloride ointment. The microscope must be constantly used to determine when the destruction of the parasite is effected, and the hair-forming apparatus is doing its work fairly, lest we produce irritation that is taken for an increase of the disease.

But let us turn to the cases where the scalp is affected. I have already spoken of epilation being necessary in all varieties, and have defined the conditions under which it is to be practised. I should add that in tinea kerion—that variety in which the hair follicles are inflamed and the disease-patch is swollen and boggy-like—the hairs being loosened and coming away in the albuminous discharge, it is best to extract what hairs are loosened.

Well, in severe and recent cases we should make at the outset, after having got a clear service to work at, a free and effectual application of some strong parasiticide. In favus and in tinea tonsurans, where the hairs are not partly loosened, I often use an alcoholic solution of bichloride of mercury, in the strength of two scruples of the latter to about six drachms or an ounce of the spirit. This is gently brushed over the part and blistering ensues; the hairs then become loosened the next day or so, and can be removed. The application causes pain, and should not be repeated, if it seem desirable, for some days. Another plan is to paint over the diseased patches Coster's paint—the iodine and tar before mentioned—and this may be done, say, two or three times, at intervals of four or five days, the black scab which forms being removed for the purpose.

But we should be on our guard against these remedies, if their use is followed by the appearance of many or the persistence of little pustular heads, or any pustular eruption, and I do not think they should, as the rule, be used to cases of tinea kerion or to tinea decalvans. But how are we to proceed in severe cases? Why, I believe that really satisfactory subsequent treatment must be based entirely on *microscopic* examination. So long as there are loosened and brittle hairs, or hairs loaded with fully-sized spores, we must use strong parasiticides, but with this caution, that we be on the look-out for the presence of much effusion or pus into the follicle, as evidenced by the masses which come away attached

to the hair-shafts. It is also to be remembered, that whilst we may roughly guess the progress of the disease by the look of the hairs, for they will be inclined to grow straighter and more in their natural direction, and not in a twisted one, when less invaded than before with fungus, yet the microscope can alone tell us whether the fungus germs are still plentiful in the follicle, and are being carried up through the papilla into the growing shaft. When we find, however, the hairs looking more healthy, and an attempt to form better roots and less fungus in the follicle, we must seize the moment just short of that time when "irritation" is about to occur and weaken our parasiticides. I am never disappointed with a weak bichloride of mercury ointment or the one used for itch—sulphur ʒss; white precipitate ɱvj; creasote gutt. ij; and lard an ounce. This should be rubbed in freely and not smeared on to the spots; that is the secret of its success. So long as the microscope detects spores in the follicles or the hairs, so long should we continue it. Oftentimes, in severe cases, by the above plan of treatment cases will last for only half the usual period. In tinea kerion, the milder forms of parasiticides, such as a lotion of sulphurous acid or the last-mentioned ointment, will rapidly aid the cure. In tinea decalvans, if the disease is acute and in rapid progress, I apply Coster's paint to the extending edge of disease, and for half an inch or so beyond its boundaries, and then use very freely an ointment of bichloride two or three grains to the ounce, extracting all short stumps of hairs, and whenever these appear I use the stronger parasiticide. When the progress of the disease stops, and young and new hairs appear, then a stimulating plan of treatment is called for. Sometimes the scalp gets puffy; the application of tincture of iodine every other day does good in these instances. In some old standing cases of tinea tonsurans, the disease becomes reduced to two or three smallish spots about the crown of the head, and may be felt and seen, according to the nurse's or parent's account, as little "knotty," or "scurfy" places. On examination we find a little erythematous patch the size of a threepenny piece or more, scaly, or slight crusted, perhaps tender, and it may be showing one or more pustular heads. We may possibly detect, in some cases, short broken off hairs or the fungus elements; if so, we must simply

epilate and use a strong ammonio-chloride of mercury ointment. But in other cases no trace of fungus can be seen, and these are they in which the yellow pustules are found. I have now seen many of them; they are instances of folliculitis, induced by the long-continued use of irritating applications, and only need to be let alone, save using some slight astringent, to get well. The treatment of secondary eruptions, eczema, pityriasis, and the like, must be conducted in the ordinary manner, and baldness prevented and the re-growth of the hair be encouraged by friction with some stimulant want: in tinea decalvans, none is better than tincture of Lytta 6 drachms, distilled vinegar ʒiss, glycerine ʒij, tincture of nux vomica ʒss, and rose-water to 6 ounces, to be used with friction night and morning. My chief object in running over the treatment of ringworms is to impress upon practitioners the paramount necessity of a constant appeal to microscopic appearances as the best guide to the effects produced by the use of parasiticides. It not unfrequently happens, that the use of parasiticides is either not sufficiently pushed where the disease is making rapid progress, or is employed in cases where the results of the irritative action of parasiticides in the follicles are mistaken for a continuance or aggravation of the disease. Further, I wish to point out that we do not employ friction sufficiently in connexion with the applications we make of parasiticides.

A GLANCE AT AN OBSOLETE MATERIA MEDICA.

BY W. BOYD MUSHET, M.B., M.R.C.P.

In the course of reading of some of the authors of the seventeenth and earlier portions of the eighteenth centuries—for information, curiosity, and special purpose—I have encountered numerous quaint and absurd medicaments. Of remedies generally, it is certain that more were drawn by our forefathers than by us from the organic kingdom, or, at any rate, that mineral productions were by them less extensively employed. Whilst, under many circumstances of treatment, and in occasional correctness of their views, we have advanced little beyond our predecessors; in other particulars, we have so simplified and improved, that it seems almost impossible to reconcile the various aspects of their knowledge,—in some respects so deficient, so uncertain; in some so complete and sterling. In some cases the remedies ordered were parts of the animal more or less corresponding with the part presumed to be affected, as human cranium in epilepsy and apoplexy, and powder of dried secundines, by Waldschmidius and others, in retained placenta. This practice evidently arose from an erroneous and superstitious notion of similitude, or mysterious affinity between the medicinal agent and the part diseased. A few of the old remedies have lingered until recent times, and may be observed in modern Pharmacopœias, as chelæ cancrorum, testæ, fel taurinum, rasa cornu cervi, succinum, spongia usta; and the effete terms, lohoch, linctus, pastæ, trochismi, rob. julapium, &c., though they have almost vanished, are to be found in works dating from the commencement of the present century. Many trivial medicines which survive amongst the vulgar date far back to the practice of former physicians, as the compound of oil of almonds and syrup of violets, syrup of buckthorn, dragon's blood, armenial

bole, cochineal, sal prunella, and balsam of sulphur; and the Gascoign balls of the shops (so named from their inventor) are the factitious representatives of the once famous bezoar stones, now exploded and forgotten. In the same category are—I adopt the technical language of the period—the plants celandine (*Chelidonium majus*), fenugreek (*Fœnumgrœcum*), bistort (*Bistorta*), burdock (*Bardana major*), plantain (*Plantago*), chervil (*Chœrefolium*), greater and lesser centaury (*Centaurium majus, C. minus*), savin (*Sabina*), horehound (*Marrubium*), succory (*Chichoreum*), madder (*Rubia tinctorum*), turmeric (*Curcuma*), sweet flag (*Acorus*), agrimony (*Agrimonia*), ground ivy (*Hedera terrestris*), brook lime (*Beccabunga*), elecampane (*Enula campana*), angelica, hedgehyssop (*Gratiola*), wake robin (*Arum*), avens (*Caryophyllata*), balm (*Melissa*), tansy (*Tanacetum*), horseradish (*Raphanus rusticatus*), rue (*Ruta*), bryony (*Bryonia alba*), garlic (*Allium*), purslane (*Portulaca*), mullein (*Verbascum*), contrayerva, yarrow (*Millefolium*), male pæony (*Pœonia mas*), wormwood (*Absinthium vulgare*), alder (*Alnus nigra*), carduus benedictus, asarabacca (*Asarum*), bugloss (*Buglossum*), houseleek (*Sedum majus*), rocket (*Eruca*), sage (*Salvia*), pellitory of the wall (*Parietaria*), mugwort (*Artemisia*), germander (*Chamœdrys*), borage (*Borago*), fumitory (*Fumaria*), sorrel (*Acetosa*), hellebore (*Helleborus niger*), mallow (*Malva*), marshmallow (*Althœa*), dittany (*Dictamnus creticus*), smallage (*Apium*), black cherry (*Cerasus nigra*), mandrake (*Mandragora*), basil (*Ocinum*), galangal (*Galanga minor*), comfrey (*Symphytum*), mistletoe of the oak (*Viscus quercinus*), restharrow (*Ononis*), lily of the valley (*Lilium convallium*), polypody of the oak (*Polypodium quercinum*), speedwell (*Veronica mas*), pilewort (*Chelidonium minus*), dropwort (*Filipendula*), St. John's-wort (*Hypericum*), lovage (*Levisticum*), melilot (*Melilotus*), fever few (*Matricaria*), coltsfoot (*Tussilago*), and a host of others, which, with their reputed virtŭes, may be found yet arranged under their respective orders in Gray's Supplement to the Pharmacopœia (1828). After becoming obsolete amongst physicians, these remained, and remain, to some extent established in the opinion of the public, and are still vended by Coffinists and herbalists. Many of them were familiar to the Arabians, to Dioscorides, and Celsus.

Ettmüller, a leading systematic writer of his time, is con-

spicuous for the recommendation of disagreeable and even revolting prescriptions. Recourse to unnatural medicaments appears to have culminated in this physician, and it is scarcely too much to affirm, that the unwitting patient, even under the most approved therapeutical methods, was ofttimes degraded—from the administration of human blood, fat, urine, skull, placenta, and mummy—to the verge of cannibalism. But at the era in question all branches of learning were tinctured with barbarism and superstition. Even the Church did not escape, as could be profusely illustrated; but it might be accounted irreverent, and would certainly be foreign to the subject. Most of the objectionable (and useless?) ingredients in the Materia Medica of the period to which I am about to refer appear in the London and Edinburgh Dispensatories of coeval date. Some of the horrid simples and compounds doubtless possessed active qualities, and exerted an effect upon the system. Of such, if ordered at all at the present day, the essence is retained by the employment of their leading principle, the offensive article in substance being rejected. It must, likewise, be borne in mind, that these were frequently conjoined with medicines of well-ascertained value, as with opium, steel, castor, henbane, hellebore, Peruvian bark, asafœtida, the mineral acids, carminatives, aperients, aromatics, and various salts, to which the chief good must be ascribed, though impute (and is it not so often in our own time?) to the former. Again, many of their mixtures, decoctions, infusions, tinctures, pills, plasters, syrups, ointments and other galenicals leave little to desire in way of amendment, and have been handed down almost unchanged. Some compounds of very ancient origin, however, as the Mithridatium, or Confectio Damocratis, contain fifty ingredients; the Theriaca Andromachi, or Venice treacle, upwards of sixty (Quincy)—in each case, mostly vegetable aromatics in combination with opium. The Mithridate of Celsus contains only thirty-five simples (Lib. v.). These were in high repute as alexipharmics.

It is, in fact, undeniable that very many of the old formulæ are ridiculously complicated and overloaded.

The celebrated elixir proprietatis of Quincy's Dispensatory (1736) is of the same composition as the tinctura aloës composita of the Pharmacopœia of 1851.

With regard to their preparations of iron and other minerals several are almost identical with those of to-day, though we have, of course, greatly advanced and certified their processes, which are clumsy and inexact to modern views, and it must be added that a few of their chemicals are, at the least, as indeterminate as the pulvis antimonii compositus of the last London Pharmacopœia.

But it is not my intention to dwell on, or trace back, ordinary or existing pharmacological preparations, but to take a brief retrospective glance at those distasteful remedies, which during the last hundred years have been gradually discarded, mainly in consequence of the rapid enlightenment of rational medicine by general physiological and chemical discovery.

A prominent feature of the past is the employment of the ordure of animals in disease—a practice in vogue in the days of Dioscorides and Celsus.

Stercus columbinum was used as a cataplasm in inflammation of the stomach and pestilential bubo, and the same (*stercus columbœ*) is arranged by Celsus amongst the evocant remedies (evocantia).

Stercus spavonis was deemed a specific by Pitcairn in vertigo and preternatural commotion of the spirits in the brain, and also in epilepsy by Ettmüller. The brain of sparrows mixed with calves' brains dried in smoke was much commended, *fumus nicotianæ vel avium pennarum* being applied during the paroxysm, a proceeding yet adopted by the vulgar. The same professor recommended *stercus equinum* in hypochondriasis, and *stercora avium et animalium* in jaundice, in which disease Lister also directed *stercus anserinum aut candidum ex avium fimo;* whilst for the poor (*pro pauperibus*) *stercus ovinum in cerevisiâ infusum* was substituted on economical grounds. In hæmorrhagia narium, Ettmüller ordered *cranium humanum, stercus asininum vel suillum* internally, and externally *stercus porcinum recens excretum aut bufo siccus. Stercus bublum aceto nicoctum* was held by the same to be an admirable resolvent for scirrhous tumours, and *oleum stercoris humani* very good in cancerous ulceration. Oil of frogs was also reckoned very good, whilst as an internal remedy, *verrucæ calcibus posterioribus equi masculi adhærentes* dried and reduced to powder were adminis-

tered in half-drachm doses, twice a day, as an empiric remedy. *Album canis* (*album græcum*) was employed as a gargle in cynanche, and was also administered in hæmorrhage. *Stercus vaccinum* was used as an epithem in intestinal obstructions. In similar cases, some recommended the hot caul of a gelded lamb or the blood of bats to be applied to the abdomen; and in inflammation of the great intestine the caul of a sheep, killed in the very room of the patient, laid upon the belly and shifted twice or thrice, was esteemed of excellent use *Succus fimi equini aut ovini*, *stercus columbinum*, powdered with gunpowder, the pizzle of a whale or hart, soot of wood fire, boar's teeth, pike bones, bones of the perch and carp, volatile salt of the jawbone of a pike, blood of a goat or of a hare strangled after hunting, were regarded as specifics that dissolved stagnating blood in pleurisies, and all inflammations of the chest. To allay the pain, the fat of a country mouse or *stercus gallinum* was recommended externally.

In incontinence of urine, the most noted specifics were the ordure of a she-goat, the powder of dried mice, powder of hogs' hoofs, throat of a cock roasted, pounded, and given in wine, the powder of a calcined hedgehog, the inner tunicle of a hen's ventricle, the fish found in the belly of a pike, the powder of a sow's uterus, or, for men, of a boar's pudendum.

Amongst the specifics for epilepsy, Ettmüller recommended *spiritus sanguinis humani*, *cranium humanum*, *dens hippopotami*, human secundines; whilst Pitcairn prescribed *jusculum cum lumbricis terrestribus*, *stercus columbinum*, and elk's hoof (*ungula alcis.*) The last-mentioned appears with human skull, castor, &c, as an ingredient in the pulvis anti-epilepticus of the London and of the Edinburgh Dispensatory of 1727.

The male pæony was also regarded as a specific, if gathered in proper season; that is, at noonday in July or August, or before sunrise when both moon and sun are in Aries, during the wane of the moon. It was given inwardly, and tied around the neck. The flowers of the lily of the valley gathered before sunrising, whilst wet with dew, and distilled with Spanish wine, to which castor was often added, were likewise esteemed. The mistletoe of the hazelwood and the catkins were supposed to be endowed with an anodyne sulphur, and to be very successful in

redressing the disorder of the animal spirits. The mistletoe was to be gathered in March during the wane of the moon. The mistletoe of the oak was also held useful. Many other remedies in the vegetable province were much regarded. Amongst animal preparations, the spirit, oil, and volatile salt of human blood from a beheaded criminal were celebrated. The spirit of a human putrefied placenta, or the powder of it, dried in an oven, was valued almost as an *arcanum*. The skull of one who had died a violent death, given in powder, and its spirit and volatile salt, were deemed of wonderful efficacy; and its oil applied to the vertex was reckoned to prevent the epileptic fit. Human brain and human bones were also much applauded. The liver of green frogs, liver of a wolf, gall of a black cat, spirits of urine, blood of a hunted hare, and quails' eggs were frequently employed. Amber, camphor, opium, and assafœtida were also used, mostly in combination with the preceding. Amulets of elder and masterwort were worn externally, and cephalic bags, plasters, ointments, and specific oils were applied to the back, vertex, or affected part. In apoplexy, a cataplasm of herring pickle (*de halecibus*) was recommended. Sage, rocket, cubebs, cardamoms, and mustard-seeds were highly prized as prophylactics, and as corroborants and preservatives after an attack had once occurred.

In paralysis, Ettmüller directed *millepedes, lumbricalia, formices, et viperina;* and Willis ordered, as part of the treatment, *emissio membri resoluti intra ventrem vel thoracem bestiæ recens mactatæ.* Sage was reputed to cure paralytic mutism (*obmutescentiam solvit*); and this herb, indeed, was invested with marvellous virtues (*salvia a salvendo*), and revered by some as a panacea. Hence the motto over the School at Salernita:

"Cur moriatur homo cui salvia crescit in horto?"

In loss of memory (*memoria læsa*) Sennertus, amongst other rules, advised the patient to abstain from pork, duck, goose, fish, milk, cheese, pulses, cabbage, lettuce, poppies, and summer fruits (*fructibus horicæis*). Tea boiled in wine was, by certain others, deemed a sovereign remedy for corroborating the memory and judgment.

In hysteria, *pellicula interior ventriculi capoins vel gallinæ*

was directed to be administered, or the oil of frogs, obtained by boiling live frogs in olive oil and expressing. In melancholia, the arterious blood of an ass was arranged amongst the specifics. In cases of mania, an infusion of human nails was used as a strong emetic in preference to antimony. In paralysis of the bladder, the brains of magpies were recommended to be given, with the external application of oil of scorpions amongst other treatment. *Stercus bovis recens*, with poppies and sal ammoniac, was directed as a cataplasm to the feet by Hamilton in puerperal mania. In the stuttering of children, castor in substance, or its essence, was much lauded as an application to the frænum linguæ. Oil of earthworms, by distillation, and *aurum mosaicum* were recommended in singultus and convulsive coughs. In cramps and permanent contraction of the muscles, a liniment containing human fat was highly esteemed, as was also the fat of dogs, foxes, and badgers, and goose tallow. According to Riverius, ants' eggs and the juice of an onion cure the most inveterate deafness. In hydrophobia, Mead (after Galen) held that river crabs, gathered in the dog days and calcined alive, were a specific. The blood, liver, heart, and hair of the mad creature itself, pulverized and given in drachm doses, for three days, were also employed. To the wound the hair of the animal was sometimes applied, and sharp cataplasms or cupping-glasses, though the most effectual agent was considered to be the actual cautery, as abolishing the seminal crasis of the poison. (Now there is a medicine, which was much vaunted by the older practitioners as an antispasmodic, and which was specially recommended in hydrophobia by Dr. John Wall, of Worcester, in 1744. I allude to musk. In the *Philosophical Transactions*, this physician published a number of cases bearing evidence in favour of the drug in hydrophobia, hysteria, hiccough, mania, febrile delirium, and convulsions. Musk had been previously employed, as by Ettmüller, in infusion with camphor, for external application to the head in mania. The dose directed by Dr. Wall was about ten or twelve grains. It has been favourably mentioned by successors of Dr. Wall, especially by Cullen and Swediaur but its high price has doubtless proved a great drawback to its use, as well as tended to impair its genuineness. It certainly deserves a trial by us moderns, in this age of thera-

peutical experiment, to determine its power, as I honestly confess that I have never witnessed its administration.) In anaphrodisia, *testes galli*, spirit of cock's blood, blood, brains, and penis of a cock or bull, killed during coitus, shaving of a bull's horn taken under the same circumstances, troches of vipers, or of pullets fed with vipers, were most in favour. Ambergris and civet were likewise resorted to; and milk, Spanish wine, chocolate, dates, eggs, and oysters were directed to be included amongst the diet. Hence Byron says:

"Eggs, oysters too, are amatory food."—*Don Juan*, Canto ii.

In inflammation of the liver from excessive venery (the ætiology is to us hardly satisfactory), the liver of a living black-cock was to be cut out and bruised in four ounces of vinegar of roses until quite dissolved. The liquid was strained, and exhibited warm as a draught. In cases of atrophy, *pinguedo humana* was mixed with oil of laurels and used as an ointment. According to Gray, this remedy was still adopted in the hospitals of Russia in 1828.

Decoction of the shavings of the penis of a whale or stag was esteemed amongst the specifics for dysentery by Ettmüller, who also reckoned highly the shavings of a man's skull who had died a violent death, the moss of the skull, powder of the tooth of the sea-horse or unicorn, blood of a hare killed by dogs, the blood of a lamb killed after frighting, dried livers of serpents and vipers, livers of green frogs, and powdered horsehoof in the same disease. The jawbone of a pike was strongly recommended in convulsive colic.

Decoctum capitis ovini vel pedum vitulinoram, vel intestini vervecini, with olive oil, was thought highly serviceable by Purcell as an injection in colic. In jaundice, *urinæ potus, pediculi, lumbricalia, viperina, stercora, et lapis in folliculo fellis tauri*, were ordered by Ettmüller. Some advised three or four living millepedes to be swallowed by the patient. Rosemary was believed to be a specific against hæmorrhoids (*rosmarinus singulis auroris comestus hæmorrhoides penitus tollit*), and oil of stagflies and oil of millepedes were regarded as very good for inunction. *Enema urinæ sani* was employed by Willis in tympanites, and by Ettmüller in dropsy. In diabetes, a calcined cock's-comb

was deemed by many to be an *arcanum*. Mayerne highly approved of *ova formicarum* in dropsy. *Millepedes ex vino rhenano et testæ ovorum* were also in high repute as diuretics. In fact, millepedes were a very favorite remedy with most—as Sennertus, Riverius, Quincy, and Mr. Boyle—and were prescribed in cephalalagia, palsies, epilepsies, and as deobstruents in icterus, rickets, scrofula, pertussis, and ischuria, and Ettmüller thought highly of them in asthmata of all kinds. In strangury, Mayerne considered *apes sciccatæ ex vino albo* to be a grand remedy. As lithontriptics, *urina hirci et tauri* were prescribed; also *sanguis hirci præparatus*, which was enjoined to be procured from the proper artery of a middle-aged goat about the beginning of summer. This was to be dried by the heat of the sun or a slack oven. The spirit of putrefied earthworms, the powder of scorpions, the bodies of crickets, and essence of wrens, were also much extolled.

In parturition, the expelling specifics (ecbolics) were *haustus urinæ mariti, succus fimi equini* mixed with wine, castor, oil of amber, oil of hazelwood, borax, powder of an eel's liver and gall-bladder, powdered vipers, *pulvis testium equinorum*, powdered human after birth—the last most potent. Externally, a girdle of snakes' cast coats was applied, or an ointment of earthworms, juice of river crabs, and the fat of a fox or hare to the abdomen. Hamilton prescribed oil of almonds and syrup of violets in precatamenial pains.

Jusculum cancrorum fluviatilium, oculi et chelæ cancrorum, margaritæ præparatæ, corallium rubrum levigatum, were used as absorbents in diarrhœa. In rickets, Glisson recommended *enemata fimi equi non castrati*. Cataplasms of a swallow's nest were applied in quinsy; and a falling of the uvula was attempted to be cured by a mixture of yeast, spirits of wine, mastic, and amber to the crown of the head. A dried toad to the armpits was adopted in epistaxis occurring during the progress of fevers, and the same, or tied to the forehead, was employed in hæmoptysis. In the latter, mummy was also administered. Spirit and oil of human blood were much esteemed in hectic. A plaster of spiders, toads, and Venice turpentine to the stomach was deemed of much service in intermittents, and spiders and their oil internally.

Viperine medicines were highly valued by Willis in impetigo, elephantiasis, and leprosy. *Aqua limacum* was prescribed as a pectoral balsam, and in scurvy. Lister thought (universals being premised) that a mixture of cochineal and levigated cuttle-fish was very efficacious in the nocturnal pains of syphilis. As a sample of the therapeutics and style of the period (1699) I quote from Ettmüller—translated and abridged—the observations concerning scrofula. "The internal cure of the king's evil is compassed by perging with sweet mercury and black hellebore, and administering the decoction of swallow-wort, pilewort, dropwort, and broom, or the following absorbent powder. Take of burnt sponge three ounces, bones of the cuttle-fish, jawbone of a pike, prepared crabs' eyes, long pepper, white-ginger, roots of pellitory of Spain, galls and calcined egg-shells, of each an ounce. Make a powder; dose half a drachm. The powder of lizards with honey in the form of an electuary is also of excellent use."

Does not this prescription foreshadow the employment of iodine and antacids in scrofula, and hint such treatment to posterity?

To glance at the surgery of the period. In St. Anthony's fire, amongst other remedies, water of cows' dung distilled in May, and clouts dipped in hare's blood or in the *sanguis primæ catameniæ virginis* were employed externally. To a bubo in the axilla or groin, roasted onions and garlic, toads dried and soaked in wine, or a blistering plaster, if the skin were thick and the swelling obstinate, were directed. Pigeon's milk warm from the animal was reckoned an excellent anodyne in burns affecting the eyes. Raw beef was applied to contusions and also to gouty parts, and the roots of Solomon's seal as a cataplasm—both which practices yet linger among the people. In general contusion, Riverius recommended *corium vervecis recenter mactati* smeared with honey as almost infallible in its operation.

In cases of wounds, acids were strictly prohibited: hence the wound was to be kept safe from the injury of the air, which, it was thought, had a notable tendency to engender acidity; and *vulnerary* medicines were administered from their reputed property of subduing this tendency. Amongst these were *album*

græcum, earthworms, burnt river crabs, and the blood of goats. Ear-wax as an ointment was held to be of peculiar virtue in wounds of nervous parts. In gun-shot wounds, suppuratives were extolled, as tents dipped in spirits of wine, and the part was ordered to be covered with a liniment of oil of white lilies, in which puppies had been boiled until their bones were dissolved. To this boiled earthworms and Venice turpentine were added. For ulcers, especially chronic, digestives, mundificants, sarcotics, and epulotics were enumerated. *Ceratum resinæ*, yolk of eggs, turpentine, myrrh, honey, and oily alkalies were amongst the ancient digestives. The mundificants included balsam of Peru, saturnine applications, vegetable decoctions, and certain mercurial ointments. The sarcotics and epulotics differed only in degree, amongst which were Turner's cerate, linseed oil mixed with lime-water, alum, and other astringents, and the escharotics.

The more fanciful and extreme remedies which I have mentioned, such as unicorn's horn, bone of a stag's heart, bezoar, elk's hoof, *album græcum*, *cranium humanum*, *stercus pavonis et anseris*, *sperma ranarum*, &c., were derided by our countryman, Dr. Quincy (1736); but he nevertheless reposed faith in many others equally useless and ridiculous. In the Universal Pharmacopœia of Dr. Swediaur (1803), published in London, Paris, Leipsic, and Vienna, there is no inclusion amongst the compounds (*medicamenta composita*) of any of the disagreeable simples of the former century. This physician appears to have been of independent thought, unshackled by the prevalent unbounded reverence for Hippocrates, and rejected all substances whose value was not to some extent determined.

It may be objected that allusion to an obsolete materia medica is altogether purposeless; but I have thought it not without interest to review our progress, contrasting our past with our present *pharmaceutic* position—using the term in its original sense to signify that one of the three parts into which medicine was divided (φαρμακευτική, διαιτητική, χειρουργική), *quæ medicamentis medeatur*.

ON SOME ENGLISH SALT SPRINGS.

BY JOHN MACPHERSON, M.D.

It is probably owing to the fact that even our most inland places are not very remote from the sea, that but very little attention has been paid to our salt springs. Our *wiches*, though employed from the earliest times as sources of wealth to their proprietors, have been scarcely used at all for medicinal purposes, while similar springs on the Continent have supplied some of the most popular baths. The great value, indeed, of such springs is mainly for baths; most of them are too salt to be drunk with much advantage. Beneke, and those who have studied the subject most carefully, seem to have arrived at the conclusion, that something like forty to fifty grains to the pint—about the standard of Kissingen—is the most desirable strength for a drinking salt well; and observation is believed to have shown, that when a water contains a larger proportion of salt than this, it is better to dilute it, than, as is usual, merely to administer a smaller quantity of the water.

Viewed by this standard, the Builth waters are quite strong enough, and the old Sulphur Well at Harrogate is too strong; it indeed approaches in strength to the true brine springs, and its salt quite overpowers its sulphuretted hydrogen. The following table gives the comparative amount of common salt per pint in some salt springs:—

	Grains.
Harrogate	108·2
Nauheim (Salzbrunnen)	141·8
Ashby de la Zouch	152
Salzungen	1997
Middlewich	2049
Droitwich	2760

Although baths and pump-rooms were erected some years ago at Ashby de la Zouch, much has not been heard of it of

late years; but Woodhall spa has been so prominently brought before the public, that I went last autumn to visit it.

Woodhall spa is easily reached in about an hour by rail from Lincoln or from Boston. It lies in a flat, uninteresting country, with no village in the neighborhood. There is a very fair hotel with pleasure-grounds adjoining it, and a good deal of wood has been planted around it. Still, in my opinion, scarcely any place could offer fewer attractions, and I saw it to the greatest advantage on a bright sunny day. There is a considerable resort of patients, chiefly of ladies, to the place, which has a great local reputation; but I heard complaints of the hotel, and lodgings are scarcely to be procured within a mile of the spring. There is no resident doctor. There is a nicely enough fitted up small pump-room, and there are some twenty or thirty bath rooms. They have no apparatus for douching, but, as a substitute for such, they had a hydropult. The water, though very salt, is not unpleasant to the taste when fresh drawn; it is pleasanter when drunk at the well than in the pump-room. The spring was originally reached by boring.

The cases sent here for treatment are somewhat multifarious, apparently chiefly cases of glandular enlargement or of scrofula, and rheumatic affections with thickening of the joints. I also heard of some cases of skin affections.

There seems to be no question that a certain class of patients, long in hospital with chronic affections of a scrofulous nature, may benefit by these waters, much in the same way as they do by change of air to the sea-side and by sea-bathing; only bathing in the open sea can never be carried out as systematically as in indoor baths. The general analogy between the waters of Woodhall spa and those of the ocean is shown by the following comparison of their chief constituents, taken from Mr. Cuffe's account of the spa.

	Woodhall.	Sea Water.
Chloride of Sodium.....	152	174
" Magnesia.....	10·5	32
" Calcium.....	13	—
Bicarbonate of Soda.....	5·6	—
Sulphate of Magnesia.....	—	19
" Lime.....	—	12

But the Woodhall spa has ·63 grain of bromide of sodium and

·33 of iodide of sodium against the minute quantities of bromides and iodides present in sea water. Now it is to the presence of bromides and of iodides that the special virtues of the Woodhall waters are ascribed; but is it reasonable to ascribe to them such virtues? First as to drinking: a child who is ordered to take four ounces of the water in the day, takes in ·2 grain of the iodides and bromides together. An adult who is ordered twelve ounces, in like manner takes in ·6 grain of the same. If we admit that such quantities can operate on the system, we must be prepared to believe in infinitesimal doses, or to revert to belief in the occult powers of nature.

The small doses of chloride of sodium in the Woodhall water are doubtless useful, just as small doses of sea water were for a long time considered to be so; but to introduce as much as 8 grains of the bromides and iodides into the stomach, the patient must drink 4 oz. of other salts. It is therefore simply impossible to prescribe to a patient any useful amount of bromides in the Woodhall water, without over-dosing him with other salts.

Then, again, if Woodhall water be compared with sea water for bathing, it is evident that the former must be less stimulating to the skin than the latter, as the gallon of it contains only 1,408 grains of the chlorides, while the same quantity of sea water contains 1,905 grains, and I presume that much absorption of the 8 grains of the bromides to the gallon which are present could not be looked for.

Although I have no faith in the power of promoting absorption which is ascribed to waters because they contain minute quantities of the iodides or bromides, yet seeing the immense popularity of Kreuznach, Ischl, and various other salt springs in the treatment of many of the complaints of females, it is a pity that some of our stronger brine springs have not been more used. It is, indeed, admitted by dispassionate judges, that the treatment at such places never really diminished a fibrous tumour, and, like all other treatment, fails to produce the absorption of an ovarian cyst; but it is at the same time admitted, that it has often been of use in improving the general condition of the uterine system, and has given relief to the secondary symptoms produced by such affections.

I believe there is only one place in England where the

concentrated salt baths so popular in Germany can be had, and this is the rather dull, old-fashioned town of *Droitwich*. Unfortunately there is nothing in the place or its neighbourhood that is attractive; otherwise all the effects produced at Kreuznach, Ischl, and Reichenhall by strong salt baths could be easily obtained here; indeed none of those places have such strong brine springs.

An average salt bath may contain 2,000 to 2,400 grains of salt in the gallon, but the Droitwich water is represented as being about eight times as strong. There may, perhaps, be some overstatement in this, but the following account given by a gentleman who has recently bathed there attests sufficiently their concentration. He writes to me that "the baths are not first-class, but the bathing is most luxurious. So deeply impregnated with salt, that I half realized a visit to the Dead Sea. I could not sink, and only kept in the bath by putting two bricks of about fourteen or twenty pounds each on my chest and feet. The bath had a pleasant sparkling feeling."

But the most remarkable salt well in England is that of *Redruth* in Cornwall. It issues from a depth of 230 fathoms; it is of the temperature of 122° Fahrenheit, and, according to Professor W. A. Miller's analysis, contains in the gallon :—

	Grains.
Chloride of Potass	14·84
" Lithia	26·05
" Soda	363·61
" Magnesia	8·86
" Lime	215·17
Sulphate of Lime	12·27
Silicic Acid	3·65
Total	645·45, with 8·91 in. of gases.

This well, therefore, contains four times as much lithia as the strongest well of it hitherto known, and it is so abundant that it yields nearly 900 lbs. in the twenty-four hours.

In rather more than 2½ pints of water you could administer to a patient 8½ grains of lithia, with 215 grains of other salts. In 4 pints of the Murquelle at Baden, the strongest lithia well hitherto known, a patient gets about 9½ grains of lithia with 88 grains of other salts.

ON THE THEORY OF COUNTER-IRRITATION.

BY DR. ANSTIE.

If ever the course of a scientific discussion justified those who inaugurated it, I think it must be allowed that the controversy stirred up by Dr. Dickinson and myself, in the course of last year, upon the subject of counter-irritation, has justified us in commencing it. It has been shown that there is no clear understanding, among the orthodox upholders of the practice, either as to the agents which may rightly be called counter-irritants, as to the circumstances in which they should be used, or as to the method of their operation. For my own part, I have been fairly startled—prepared as I was for a good deal of discrepancy in the arguments by which our sceptical objections to the popular theory and practice would be met—by the wide divergence of views that is now shown to have been all along concealed under the external appearance of agreement in the orthodoxy part. And I have no doubt that Dr. Dickinson, no less than myself, esteems it one of the most fortunate results of the discussion, that we have succeeded in eliciting so logical an analysis of the question, from the conservative side, as has now been contributed by Dr. James Ross; whose previous writings on the subject had failed to attract as much attention as they deserved. Dr. Ross is a firm believer in some of the traditional virtues of counter-irritants which have been most strongly impugned by Dr. Dickinson and myself. But he has drawn a clear distinction between the clinical facts, which are capable of different explanations, and the theories which by the older schools of medicine were assumed as necessary to account for them; and he has shown that these theories are inconsistent with each other, and must be superseded by something more in accordance with modern principles of scientific reasoning. Whether he has succeeded in supplying

this desideratum is another matter, which will form one of the topics for discussion in the present paper.

For many years past I have felt profoundly dissatisfied with the results of the routine use of the agents most commonly included under the phrase "counter-irritants;" and still more dissatisfied, if possible, with the theories upon which that practice appeared to rest. In the first place, it appeared to me that such an enormous aggregate of suffering was inflicted upon patients, by the use, more especially, of blisters, as could only be justified by very stringent evidence of its high utility. Secondly, I had observed a large number of cases in which a homœopathic or some other indifferent treatment had been followed by equally good or better results, in inflammatory diseases, than were obtained by even the most sedulous use of counter-irritation. And thirdly, I could come to no other opinion, after the best study which I could give to the orthodox theories of counter-irritation, than this: that at bottom they rest on no better foundation than a kind of general idea—perfectly metaphysical in its origin—that *what hurts one tissue or organ must benefit the neighbouring structures.* I by no means expected, however, to find that nothing could be said on behalf of counter-irritation; indeed I presumed that the rude scepticism of my assault would probably provoke a severe retort from some of the distinguished representatives of conservative ideas in medicine, and I was by no means sure that that answer might not be a complete extinguisher. Under these circumstances it was a considerable comfort to me to find that Dr. Dickinson (whose first paper, published before my own, I had not seen till mine was nearly written) had been thinking, with even more audacious scepticism than my own, on the subject of counter-irritation. There is, however, an important difference between my own position and that of Dr. Dickinson, and that of Dr. Dauvergne, whose paper (reprinted in this journal from the *Bulletin de Thérapeutique*) represents the extreme of opposition to the use of blisters. Both these latter authors appear to dispute the likelihood, if not the possibility, of any effect being produced on a local disease so far removed from the part to which we apply counter-irritation as an inflamed lung, for instance, is from the skin to which blisters are so commonly applied for its relief. I, on the contrary, do

not absolutely deny that any influence may be exerted on organs thus far removed from the site of "counter-irritation," or that this effect may occasionally prove beneficial. What I do dispute is, that there is any such certainty in the method as to justify our employing it, except in cases where the part "irritated" and the organ intended to be acted on are in recognizable communication with each other through the medium of the nervous system, and in a mode strictly limited to the production of merely *stimulant effects*. I have spoken of the hope that we can control inflammations of the lung or the bowel by blisters, &c., as "ludicrous;" but it must be well understood that the ridicule is intended to attach, not to the idea that such an influence may be physiologically *possible*, but simply to the notion that we can *direct it and graduate it at will*, while taking no further precaution for the purpose than that of simply placing the blister on a part of the skin *opposite* to the organ we wish to reach. That idea seemed to me, and it seems still, both ridiculous in a scientific and disastrous in a practical point of view. And, as a final justification against the imputation of an undiscriminating hostility to the use of what is called counter-irritation, I may recall the fact, that my paper in the *Lancet* was specifically directed against the "*popular idea of*" that practice. That paper was read before the Medical Society of London, and in the very lively discussion which followed a sufficiently accurate foreshadowing was given of the confusion, both as to theory and rules of practice, which the more formal essays published on the other side have since shown to exist among the ranks of the upholders of the frequent use of counter-irritants.

The argument propounded by Dr. James Ross stands so clearly apart from those advanced by any others of the recent defenders of counter-irritation as a practice generally applicable on the large scale to the treatment of disease, that it must be reserved for separate discussion. The only feature which it possesses in common with the hostile commentaries on my original paper which were made by speakers at the Medical Society, by a reviewer in the *Dublin Quarterly*,[1] and by Dr. J. Risdon Bennett in his very able paper in the *Practitioner* of June 1869, is the

[1] Dublin Quarterly Review, July 1869.

small account which it takes of the positive suffering inflicted by the severer forms of counter-irritation (which are those most commonly employed), and of the very real dangers to health, and even life, which they unquestionably involve. Upon this point, I cannot help criticising, with some severity, every section of the party which upholds the frequent use of these agents. I do not know whether either Dr. Bennett or Dr. Ross have ever personally endured the infliction of a blister, kept open for a week or so, but I have; and I can speak to the fact of its entailing an amount of pain and inconvenience to which no patient ought to be subjected except for very good reasons. But the matter is far more serious in regard to the effects of this treatment, when recklessly applied to children and delicate women. Even if we grant that Dr. Bennett is justified in dismissing, as a mere "bogie," the suggestion of Dr. Dickinson that infective processes may be set up by the artificial wound, it is none the less true that delicate children with broncho-pneumonia may be killed with a single blister, and that weakly subjects of post-partum peritonitis may be easily extinguished by the zealous use of the turpentine stupe: yet who that has made acquaintance with average practice will deny that numbers of medical men still lean with blind dependence upon such remedies in such cases? They are the refuge of the destitute, the one haven that seems open in stress of dirty weather!

Let us now examine the counter-irritation theories of the orthodox, expressly excluding Dr. Ross from that respectable company. Those who accuse young medicine of wanton heresy in this matter seem to think that the old system was self-consistent, and was merely the practical working out of a principle which equally holds good under the ancient and the modern physiology. I think it is not difficult to disprove this idea. There are, in fact, two main theories which have been vaguely held at various times; now one, and then the other predominating in the minds of the adherents of counter-irritation; namely, the theories of *depletion* (in a mainly mechanical sense) and of *derivation* or *revulsion*, which was for the most part a vitalistic and ontological idea. The first of these is that adopted by Dr. J. R. Bennett in his able article above mentioned, and I must confess that it appears to me to offer the only respectable defence that

can be adduced for the commonest of all uses of counter-irritation; viz. the employment of a severe skin-irritation to relieve a deeper organ embarrassed with acute inflammation. It rests on the maxim, *Ubi irritatio, ibi fluxus*, and presumes that the congestion produced by irritating the skin implies the withdrawal of so much blood from the part which is unduly engorged. Taken in this sense "counter-irritation" includes, of course, not merely blisters, turpentine stupes, mustard plasters, and other *painful* applications to the skin, but also mere hot fomentations, and all other means by which the skin can be artificially congested. I shall not stop here to scrutinize the clinical facts upon which Dr. Bennett and those who think with him rely for proof that such external remedies do reduce the congestion of deep-seated organs, and thus lessen inflammatory processes, hasten absorption, &c. That criticism must be deferred to a future paper. But granting for a moment the therapeutic fact, and granting to the full that hot fomentations, equally with blisters, have the power to produce more or less considerable skin-engorgement, I have to ask a further question:—How can you assure us that the only common property of blisters and fomentations, in virtue of which they can be supposed to relieve the congestion of distant organs, is that of congesting the skin? It is at least abundantly conceivable that the effective common property is that of stimulating the peripheral nerves and (by reflex action) the vaso-motor nerves of the distant organ. On the other hand, there exists one well-known and most powerful objection to the depletion theory, namely, the enormous difficulty of supposing that the depletive action would be exerted to any greater extent upon the inflamed organ than upon the remainder of the circulation; while, unless this were the case, it is impossible to understand how the depletion actually exerted on the organ we desire to reach could be sufficient to cause any appreciable relief from mechanical pressure. Let us try to realize the facts, approximatively. We will suppose that a pneumonic lung, in the stage of red hepatization, contains from six to eight ounces more blood than usual—surely not an extravagant hypothesis. We will assume that by the application of a blister, six inches square, we are able to at once overfill the vessels of the skin to the extent of three or four ounces, and

during the ensuing twenty-four hours to extract one ounce of serum from them—assuredly a liberal computation. What follows? why, that we withdraw from the arota and vena cava the above-named bulk of blood, scarcely any of which will come directly from the inflamed lung, the quantity of blood in which will therefore practically be only diminished in the degree of its proportion to the general mass of circulating fluid. But even this gives too flattering an estimate of the effect likely to be produced: since the paralytic dilatation of the vessels of the inflamed organ may only too probably persist, in which case one must suppose that the part would quickly re-acquire its exaggerated complement of blood under the necessary conditions of mechanical pressure within the chest.

Such are the difficulties of the depletion theory at one end of the scale, in the case, namely, where the inflamed organ is anatomically so remote that no direct relation can be traced between its vessels and those of the skin which we irritate. A precisely opposite difficulty occurs where the organ which we aim to affect is very near, and pretty closely connected (vascularly) with the skin on which we act: here we may indeed affect the inflamed organ, and that very powerfully; but how can we assure ourselves that the paralytic dilatation induced in the skin-vessels will limit itself accurately to them, and may not extend to and aggravate the condition of the deeper vessels? Doubtless we may figure to ourselves a kind of typical case, in which an irritant, acting upon skin supplied by vessels connected with the vascular network of the diseased organ, shall be just far enough from the latter, and mild enough in operation, to affect *only* the skin-vessels, converting them into dilated reservoirs into which the blood from the engorged part may overflow. And upon the depletion theory this class of cases, one would suppose, must include all the instances in which counter-irritation is useful. But it would then altogether fail to explain the asserted benefits of the treatment in pneumonia, or in affections of the ovaries, &c.

The other principal theory on which the routine use of counter-irritation has been defended is that of "superseding one morbid action by another," which Dr. Dickinson believes to be "at the bottom" of the practice. I believe that

to the largest extent this has been, and still is, the case; and I regret the fact, for it is not creditable to the philosophic education of the profession. The theory really is a "relic of notions belonging to times which were antecedent to the birth of scientific physiology:" and (*pace* Dr. Bennett) I must repeat my conviction that it is still the "leading idea of counter-irritation" for very many practitioners. It is of little use to contend that the mass of practical physicians and surgeons are quite guiltless of any predilections for mystical or metaphysical methods of reasoning about medicine; the fact is, that they inherit from their predecessors a traditional language and traditional forms of thought which unconsciously fetter them to a far greater degree than they are aware of. Nay, more, I cannot help remarking that even Dr. Bennett, though he takes, on the whole, what seems to me the far more scientific standpoint of the *depletion* theory, has still a lingering tendency towards the *substitution* theory. He quotes the *metastases* of disease, in illustration of the possibility that counter-irritation may produce effects at long distances; and he makes the same strange application of Hippocrates' maxim (that when two pains occur at once, in different parts of the body, the greater will annihilate the other), which was a fruitful source of confusion in the speculations of mediæval physicians. Dr. Dauvergne (with much of whose paper I am obliged to disagree) has well exposed the fallacy of applying the above maxim to the case of inflammations. "Pains," he says, "are not inflammations, nor even congestions, and to obscure or mask a thing is not to divert or to destroy it. Yes, the old man of Cos was right when he said that a stronger pain can mask a weaker, but he was talking of a phenomenon of sensation." To me it seems clear that no inference can logically be drawn from the one case to the other, except on the basis of exploded vitalistic theories, which regarded disease as a distinct and hostile entity, whose assaults upon the organism were resented by the voluntary action of a vital spirit. And surely, the whole idea of "metastasis" is nothing more than a relic of the same school of thought. Even in the case of the so-called migrations of gout, there is nothing which truly deserves the name of metastasis, for the gouty taint equally

pervades the whole organism, even at the moment when its inflammatory manifestations cease at one spot and commence at another. But to apply the general principle of substitution to the artificial treatment of the numerous inflammations which depend upon fixed morbid deposits or mechanical mischief, as is constantly done, *e.g.*, in the case of pneumonia depending on heart disease, or meningitis depending on tubercle, seems to me, as it does to Dr. Dickinson, entirely unreasonable; nor do I believe that it would ever be done by one who had fairly shaken himself free of the ontological view of disease, which is still copiously represented in our medical language by such luckless phrases as "elimination," and the like.

But it is time to turn to the consideration of Dr. Ross's theory, which differs essentially in character from both of those which have been noticed. In the first place, Dr. Ross is neither consciously nor unconsciously a vitalist. He does not regard disease as an entity, to be hustled or coaxed out of the body by force or pious fraud, and he therefore naturally rejects the substitution theory. Next, he refuses to admit the depletion theory, on the double ground that the machinery of relief which it assumes is neither demonstrable nor apparently possible, and that mere depletion would not account for the clinical facts. He draws out a series of "empirical laws" which are a rough, but, as he thinks, sufficient representation of the main clinical facts; and these laws sufficiently agree with the proposition which he puts forward as a "main intermediate proposition between the theory and the practice of counter-irritation," viz. that irritation of one part of the body tends to stimulate the textures in its vicinity. Finally, he propounds the theory that counter-irritants exert an influence, always *stimulative* and not *depressing* in *tendency*, and that this influence is exerted, for the most part, not through blood-vessels, nerves, or any special structures, but through *continuous, and also through contiguous, parenchyma*. I shall not at present revert to the discussion of Dr. Ross's empirical laws, because that subject belongs to the domain of clinical observation, and I must confine my present remarks to matters of physiological theory, reserving to a future

occasion the criticism of the clinical evidence which has been adduced.

I am anxious, at present, to conclude the history of the theoretical part of the recent discussion by explaining the hypothesis put forward my myself, which is as follows. 1. It can hardly be doubted that if so-called counter-irritants are to do any good in the *early pyrexial* stages of inflammations, they must do so by the exercise of an influence which contracts the arterioles, thus heightening the arterial blood-pressure and relieving the stress on the capillaries. 2. But all experimental evidence goes to show that *strong* irritation (strong, *i. e.*, either from the virulence of the agent, or the directness with which it is applied to the suffering part) tends to produce, not contraction—or this only momentarily—but paralytic dilatation of the arterioles, and passive overfilling of the capillary web. 3. Hence it would appear that if the more powerful stimulants ever do good in the acute stages of inflammation, it can only be when they are applied at such a distance that their influence falls very gently, and much diluted, on the part aimed at. 4. It would seem probable that the effects of milder skin-*stimulants* would be equalised with those of *irritants*, on the condition that they were applied nearer to the engorged organ, or to a larger surface of the skin; in either case the *quantity* of the influence would make up for the lack of *intensity*.

As far, then, as regards the possible benefits of skin-excitation on the *early stage of acute* inflammations of distant organs and tissues, my theory considers that all these efforts are produced by a *stimulative* action on the *vessels* of the diseased part.

5. The case of *chronic* inflammations, with no or with little pyrexia, was not sufficiently dealt with in my former paper, owing to limited space. Dr. Ross has truly remarked that the tendency of modern practice is, on the whole, towards restricting the use of counter-irritation to the treatment of the chronic forms and stages of inflammation. He points out that in the pathological stage which succeeds to that of acute pyrexia and constantly increasing engorgement, the inflamed part is the scene of abundant vital movement (cell-growth, proliferation, &c.), which, however, is of a low type. It is upon this, he

thinks, that the stimulating influence of counter-irritation acts with good effect; it substitutes for this profuse but debased activity a more restrained but higher type of formative action. I now beg to say that so far as counter-irritants can do good in this stage of inflammatory diseases, my theory is identical with that of Dr. Ross as to the effect produced, the only question left open is that of the channel of the influence. On that point, as will be seen directly, I do not agree with him.

6. The case of *neuralgic* affections appears to me to throw direct light on the *modus operandi* of counter-irritants in inflammatory diseases. The remarkable utility of blisters in neuralgia is a long-established fact; but my own observations lead me to think that these remedies as frequently do harm as good, from a wrong mode of application. I have repeatedly found that blisters applied directly to the site of the pain if anything *aggravate* the suffering: but, on the other hand, if they are applied to a posterior branch of the spinal nerve-trunk from which the painful nerve issues, a reflex effect is often produced of the most beneficial character. For example, a blister applied over the *posterior* branches of the intercostal nerves is a powerful remedy for pain situated in the course of anterior branches towards the front of the chest. Were *pain* the only symptom relieved in this manner, however, the argument would be incomplete. But it happens, in some cases of inveterate neuralgia, that inflammatory affections are secondarily produced around the points of greatest pain; and these secondarily inflammations are remarkably benefited by the application of blisters in such a situation that they can only act in the reflex manner above indicated. Here, then, is a case in which one can identify the path of the noxious influence, and also the path of the therapeutic influence which successfully opposes it. It appears that the functional condition of the sensory nerve-centre, which corresponds to pain at the periphery of the sensory nerve, can extend its influence to the associated vaso-motor nerve-centres, and finally issue in paralysis of vaso-motor fibres going to the vessels of the painful part. Hence local congestion, hypersecretion, or altered secretion of glands in that neighbourhood, &c. This state of things, it seems, can be remedied by a stimulant influence falling upon the sensory nerve-centre through the

channel of centripetal fibres, which have no connexion with the inflamed part except through the centre, but yet have a very clear and definite connexion with it *by that route*. I cannot but think that we have here most pregnant suggestions towards a reasonable theory of counter-irritation as a remedial agent in inflammatory affections. I have never denied for an instant that the transmission of an influence from the skin to distant organs is possible; but I insist upon two things. First, that unless we can proportion the force of the skin irritation to the vital status of the part to be acted on, we are as likely as not to produce an effect exactly opposite to what we intended; and secondly, that we ought to have some guarantee for the influence being limited in incidence to the affected part at which we aim it. And it seems probable that by reflex stimulation applied to a physiologically distant tract of skin, which is nevertheless in direct communication with the centre on which depend the vaso-motor and also (if, as seems probable, they have an independent existence) the *trophic* nerves of the affected organ, we at once secure the necessary *dilution* of the influence, and an intelligible *path for its transmission* to the diseased part, and to that alone.

7. Dr. Ross limits the beneficial action to the secondary stages of the disease; but it appears to me that whatever good may be produced at this stage through the reinforcement, or (as he would call it) alteration in type, of the tissue-force, may be equally expected in a state of mere inflammatory engorgement by appropriate stimulation of the vaso-motor system of the affected part. And as regards the channel by which the influence is to be conveyed, I have to object to Dr. Ross's theory of the transmission, through continuous and also through contiguous parenchyma, of the stimulant action, that although it is not impossible that a stimulant influence may be thus transmitted independently of the nervous system, it is most improbable that upon the common plan of merely applying irritation to a large surface of skin that happens to be *opposite* the inflamed organ, any precision of effects can be attained. If, for instance, we attack with our blister some five or six inches square of the skin covering the chest of a pneumonic patient, it is impossible for us to be sure that in attempting to produce a beneficial stimulant action on the lung

beneath we shall not gratuitously involve six inches square of previously healthy costal pleura in an *inflammation*, which may be by no means trivial in its effect upon the final issue of the case. And it seems to me that this is a serious objection to the theory of Dr. Ross so far as it applies to the use of blisters or other strong irritants to the skin of the chest or the belly with a view of influencing inflammatory processes in the lung or bowel. In short, if the influence of blisters *does* "traverse the body in straight lines, like bayonet thrusts," to use Dr. Dickinson's somewhat derisive phrase, it would seem to be an uncommonly dangerous and unmanageable influence: and it is difficult to see how it could be employed with advantage in practice. Whereas, if it travels only by the paths of reflex nervous action, there is no reason to think that (unless applied on an enormous scale) it would exert any vitally depressing effect on organs so anatomically remote, and the only question would be whether it was not purely indifferent; a view to which I on the whole incline in the case of organs so situated as the lung and the bowel are.

I cannot conclude this already too lengthened estimate of the present position of the theory of so-called counter-irritation without suggesting the alterations in nomenclature which seem to me to be necessitated by our improved physiological and pathological knowledge. I am decidedly of opinion that the word counter-irritation should be altogether banished from our phraseology. "Distant stimulation," or some equivalent phrase, would properly express the effects of blisters, stupes, mustard plasters, and moist heat. The actual cautery probably acts simply by *destroying* a certain quantity of sensitive tissue, and has consequently no real relationship to agents of this class. The only case in which we should retain the phrase irritant, is that in which we deliberately excite or increase inflammation, sacrificing the welfare of a comparatively unimportant tissue or organ to higher vital interests; as, *e.g.*, when we inject an irritant fluid into a serous sac, in order to promote adhesion of its walls.

Reviews.

On the Connexion between Chemical Constitution and Physiological Action. Part II.: *On the Physiological Action of the Ammonium Bases, derived from Atropia and Conia.* By Dr. A. Crum-Brown and Dr. Thomas R. Fraser. Edinburgh: Neill and Co. (Reprint from the *Transactions of the Royal Society of Edinburgh.*)

The researches which Drs. Crum-Brown and Fraser have been conducting for some time are among the most important for therapeutics which have ever been undertaken, although at present they have not been carried far enough to be available in practical medicine. We have already noticed the first part of these investigations, which revealed the remarkable modification of the physiological action of *strychnia*, which are observed in the effects of its *ethyl* and *methyl* derivations; and we have now much pleasure in calling attention to the equally interesting results which have been obtained by a physiological comparison of *atropia* and *conia* with their respective ammonium bases.

It has been amply proved by experiment that atropia (which is nothing like so active a poison to dogs or rabbits as it is to men) causes not merely paralysis, but spasms, partly of a clonic and partly of a tetanic character, with exaggeration of reflex excitability. It is therefore a particularly interesting fact, now discovered, that the compound of *iodide of methyl* with atropia at once greatly increases the lethal activity of the poison, and at the same time prevents the occurrence of the spasms; and that the same effects are produced by the *sulphate* of methyl-atropium. On further analysis of the change thus produced in the action of the alkaloid, it appears that whereas atropia produces its paralysing effect upon the motor nerves, the sensory nerves, and also on the cord itself, the methyl compounds only paralyse the motor nerves; they produce this paralytic effect at the peripheral nerve-terminals, in the same way as atropia itself. It is very remarkable that so energetically fatal an effect should be produced by substances with such a limited sphere of action as is possessed by these ammonium bases of atropia.

The researches on conia and its ammonium bases bring out a similarly valuable series of facts. In the first place, it appears that two varieties of conia exist (Morson's and Christison's),

which differ greatly from each other, both as to lethal activity and in mode of action. The nature of the difference in mode of action is explained by the results obtained in researches with methyl conium. The hydrochlorate of this substance was greatly more lethal than the (Morson's) conia from which it was prepared; it paralyses the motor nerves and the spinal cord, and produces death with about the same rapidity as Christison's conia, but it does not show so much preponderating power over the motor nerves as that substance exerts. Morson's conia usually produces complete paralysis of the motor nerves before complete paralysis of the reflex function of the cord when the dose is small, but exactly the reverse order of events when the dose is large. Methyl conia exactly inverts the respective effects of small and large doses. The general result of experimentation is to prove that Morson's conia is in fact a preparation containing an admixture of methyl conia; hence its greater power over the motor nerves. Normal conia, the authors think, should be devoid of any spinal action. The smaller lethal activity of Morson's preparation, however, cannot be explained in this way; it may perhaps be due to the presence of ammonia. A further series of researches was made with the iodide of dimethyl conia, and this substance was found much less active than either conia or methyl conia, and to be entirely devoid of spasmodic and spinal paralysing actions.

We have no space for any further analysis of these very interesting researches, but in recommending them to the notice of our readers, we must again call attention to their great suggestiveness. A perfectly new field of inquiry is opened before us, and we beg especially to remark on the unexpected nature of the facts already revealed. How could we anticipate, for instance, that the addition of such substances as methyl or ethyl to a powerfully poisonous alkaloid like atropia would eliminate all the convulsive and tetanising force of the latter; and even if we could suppose that, how could we suppose that the lethal activity of the alkaloid would be simultaneously increased to a very great extent? Take, again, the very curious observations on the relative effects of large and of small doses of atropia, and on the exact reversal of their relations in the case of large and small doses of methyl atropia. In these remarkable facts we have the strongest possible warning against two kinds of hasty generalisation which are only too common; viz., the assumption of *complete* antagonism between the toxic forces of drugs, which are capable of opposing each other's action in certain striking particulars, and the assumption that small doses of a drug must produce effects, which are a faithful reproduction, in miniature, of the action of large poisonous ones.

We shall look forward with the greatest interest to the con-

tinuance of these valuable labours of Drs. Crum-Brown and Fraser, as also of the separate researches of the latter gentleman on antagonism.

Des Effets physiologiques et therapeutiques de l' Hydrate de Chloral. Par E. Bouchut, Medecin de l'Hopital des Enfants Malades, &c. &c. Paris: J. B. Bailliere et Fils. 1869. 75 cts.

This pamphlet is one of a crowd of publications which have lately appeared on chloral hydrate; and we merely notice it here, instead of waiting to include it in a general article on the subject which we shall shortly publish, because in one or two particulars mentioned by M. Bouchut we can check his statements from observations which were made independently by ourselves.

It was somewhat of a misfortune that the first introduction of chloral was nominally in the character of an anæsthetic, since not only did it fail to fulfil the anticipations about it in this respect, but a wrong idea was set afloat of the character of its action; viz., that it produced a heavy and narcotic sleep. The fact is the very reverse of this, and we believe that the explanation of it is to be found in certain physiological consequences of its action which we are now about to mention.

M. Bouchut rightly observes, that the action of chloral does not commence till from twenty to forty-five minutes after administration. He proceeds, however, to speak of symptoms of an intoxicative nature ushering in the chloral sleep, or ensuing on the awaking from it; and this is so contrary to our own experience, that we can only refer it to the magnitude of the doses employed by him, and which we believe to be excessive, unnecessary, and not without danger. He gives from 15 to 30 grains to a young child, and from 45 to 75 grains for an adult, and says that these doses may be repeated, even several times within the twenty-four hours. We must say that we doubt if such doses are justifiable. Even with adults, the largest quantity that we have found it necessary to give for hypnotic purposes, even to an adult, has been 60 grains in two doses, at an hour's interval from each other, the first having failed to produce the required effect: and although M. Bouchut's experience includes a very considerable number of cases, we must remark that it would require a very large number of instances of impunity, under such doses as he recommends, to reassure us as to their use, in presence of a single fact like that recorded by Dr. Reynolds at page 188 of the present number of this journal.

It is interesting to note that the sphygmographic observations made by M. Bouchut confirm those which had been independently made by ourselves with the kind and skilful assistance

of Dr. Burdon-Sanderson. The effect of a single thirty grain dose was to throw us, without any symptom of cerebral inconvenience, into a light and gentle sleep, about three quarters of an hour after taking it; and the sphygmographic tracings indicated an unmistakeable elevation of arterial pressure, which became considerable during the period of actual sleep. M. Bouchut confirms the fact of this elevation of arterial pressure, and mentions the occurrence, also observed by ourselves, of a perceptible chilliness and dryness of skin of the extremities. It seems plain, both from these observations, taken together with the case of chloral poisoning mentioned by Dr. Reynolds, that chloral contracts the arterioles, and that in poisonous doses it carries this action to the extent of strong spasmodic contraction. It would appear highly probable that its hypnotic action is produced entirely through its causing a certain degree of arterial anæmia of the brain; but if this be the case, it can hardly be desirable to push it in very large doses. M. Bouchut himself considers chloral contra-indicated in cases of organic cerebral and cardiac mischief; and we are so far inclined to agree with him, that we should have much fear of the possible results of very large doses in cases of fatty or otherwise weak heart. We can hardly doubt that the mischief in Dr. Reynolds's case arose from the effect on a rather weak heart of a too pronounced enfeeblement of brain function from arterial anæmia.

As regards the effect of chloral in relieving *pain*, especially such severe pain as that of cancer, and of hip joint disease, we are sorry to say that our own experience is by no means so favourable as that of M. Bouchut, but perhaps this is partly due to our employing less heroic doses, a precaution for which we think we have shown good reasons. Very interesting indeed are M. Bouchut's experiences of the drug in violent chorea; and certainly it ought at once to be tried on the large scale for this purpose. We also think that his suggestion of its probable benefits in relieving the suffering of labour, and in cutting short puerperal convulsions, is likely to prove highly valuable. But on these and other points in connexion with chloral we hope shortly to lay a considerable bulk of experience before the readers of this journal.

Lectures on Food. Delivered before the Society of Arts. By H. Letheby, M.B., M.A., Ph.D., &c. London: Longmans. 1870. Pp. 275.

The work before us is scarcely entitled to be considered a complete scientific treatise on its important subject; yet it may certainly be pronounced both useful and opportune at the present moment, when the all-important questions of food-economy are

attracting so much attention. Dr. Letheby presents us with a very valuable collection of facts, popularised in such a manner as to be generally intelligible, and yet sufficiently detailed and accurate in statement to serve many valuable purposes, not only for the public, but for the guidance of medical practitioners. It cannot be said, however, to represent more than a convenient compilation of knowledge which is already familiar to those who have worked at food questions; and it is curiously representative, wherever it deals with any of the more important disputed topics in the physiology of food, of the unsatisfactory and transitional stage of dietetic science which at present exists. One cannot but remark, for instance, that although Dr. Letheby in several places intimates a tolerably strong conviction that the main physiological want of the organism is *carbonaceous* matter for the generation of heat, he cannot shake himself free of the use of such terms as "plastic" food, which represent the older theory of Liebig, which assumed that nitrogenous matters were the basis of tissue-repair and muscular power. Upon the very important topic of the alimentary value of alcohol, also, his trumpet speaks with an uncertainty of sound which seems to proceed not merely from hesitation between evenly balanced authority, but from inadequate knowledge of what has been done in recent years. It is certainly rather late in the day to speak of the researches of Lallemand and of Dr. Edward Smith as "proving" that a large proportion of the alcohol ingested passes through the body without transformation; and the author ought to know that Dr. Thudichum's contrary conclusion is not his alone, but is supported by the observations of both earlier and more recent inquirers, which have in fact demolished the theory of copious elimination of unchanged alcohol.

Notwithstanding these and other defects, however, the book deals with a large number of pressing questions upon which the public urgently requires information, and deals with them in a practical way, which will be found very useful. We are not personally among the enthusiastic admirers of the author's previous writings on questions of food; and we deprecate strongly the apparently personal feeling which he has imported into some of his controversial writings on these topics; but we are bound to say that the present book is sufficiently neutral in tone. We may add that the literary style of it is good, and that the story flows on evenly enough to avoid the unpardonable fault in a work of popular science, of seeming dry and indigestible.

[We regret that pressure on our space obliges us to postpone notices of Professor Binz's work on Therapeutics (2d edition), and of several other very interesting books.]

Clinic of the Month.

On anointing in Infantile Disorders.—Dr. Knaggs states that for some time past he has been testing with uniformly successful results the value of a very simple method of treating such infantile complaints as atrophy, bronchitis, convulsions, diarrhœa, febrile disturbances generally, and indeed all disorders of childhood which are accompanied by an unnatural state of the skin. The treatment simply consists in smearing with salad oil the whole surface of the body, from the crown of the head to the tips of the fingers and toes; the process being repeated every twelve, six, or even four hours, according to the urgency of the case. Of course the use of a long flannel gown or small blanket is obvious, and the fluid should be slightly warmed. The application of oil possesses the following immense advantages over the ordinary warm bath. 1. Skin action is more completely and permanently restored. 2. The danger of reaction is avoided, for there is no sudden change of temperature; and moreover the sheet of oil protects the surface from atmospheric influences. 3. It acts as a fuel food, not only preventing waste of tissue, but actually increasing the bulk of the little patient. 4. It does not depress, but, on the contrary, appears to exhilarate. Dr. Knaggs gives some remarkable instances of benefit derived from this mode of treatment, and remarks "that it will scarcely be credited by many that the formidable affections above mentioned will frequently yield to this treatment, or at any rate show signs of abatement, in from twenty minutes to four-and-twenty hours, but such is the case; though sometimes forty-eight or even seventy-two hours will elapse before any decided signs of improvement occur. . . . Did I not confine these notes to infantile disorders, a long string of other complaints, which are to be benefited or cured by oiling, might be added. It seems as though the good old Greek and Roman practice will have to come up again. (See *Lancet*, Jan. 22, 1870.)

Chloral in Acute Mania.—Dr. Crawford relates a case of acute mania, occurring in a woman aged 56, who had had two previous attacks. Upon these two occasions sleep was almost an impossibility, various medicines having been tried without

any apparent advantage. On the present occasion she had been ill for five weeks when Dr. Crawford saw her, and the daughter stated she had not slept for five minutes at any one time. Large doses of opium and morphia had been given, but they seemed to make her even more talkative and restless. Her appetite was ravenous. Purgative medicines had been repeatedly ordered to counteract the constipating effects of the opium. Her pulse was 130, and her skin hot. She was now ordered twenty-five grains of hydrate of chloral in two ounces of water at bed-time, for three consecutive nights, with excellent effects. The first night she did not sleep much, but the talking was entirely stopped. The second night she slept for nearly nine hours perfectly soundly and tranquilly, and even during the following day she had several hours of refreshing sleep. On the third night she was equally quiet, with as much sleep; and on the following day said she was improved, and did not require any more of the medicine that made her so sleepy. Immediately after the first dose the pulse began to fall, until at the end of the third day it had fallen to 90, the temperature at the same time becoming natural. She did not complain of nausea, headache, or any other unpleasant feeling during the time she was taking it. Since that time she has remained perfectly well. (See *Medical Times and Gazette,* Jan. 22, 1870.)

Petroleum as an Antiseptic.—Dr. Fayrer records a series of cases in which he has experienced the advantage of petroleum or earth oil in the treatment of wounds. The kind of oil used was a dark oily-looking fluid, with a peculiar though not unpleasant aromatic odor. It is largely obtained in India, Burmah, and Assam. He has used it undiluted, or diluted with equal parts of oil or glycerine. It limits suppuration, and has some deodorising power, and is a useful stimulating and detergent application in sloughing and ulcerated surfaces, and in one case of carbuncle proved most efficacious as an external application. It is but slightly irritating to raw surfaces. (Ibid.)

Urethral Stricture treated with Laminaria Dilators.—Mr. Reeves has been for some time past engaged in the attempt to supply a mode of dilating strictures of the urethra by laminaria, free from the unpleasant consequences which have hitherto attended the use of this agent. The old laminaria bougies had an unfortunate tendency to swell behind the stricture, rather than within it, and the surgeon was compelled to cut down upon the retained or broken bougie before the urethra could be cleared. In Mr. Reeves' instrument a short bit of laminaria is securely fastened to a small-sized catheter, in such a manner that the whole apparatus may be readily withdrawn when the

dilatation is completed. Several cases of the successful application of this mode of treatment are recorded. (See *Medical Times and Gazette*, Jan. 22, 1870.)

Treatment of Diarrhœa in Teething Children.—Dr. Kelly, of the Evelina Hospital, observes that in this form of diarrhœa, purgatives so useful in the diarrhœa arising from improper feeding are of little or no benefit. He considers it best to give a saline mixture for the first two or three days, because there is generally more or less febrile excitement, and then, if the purging continue, logwood and catechu with carbonate of soda or chalk. According to his experience, it does not often happen that sickness or distension of the abdomen follows the use of an astringent; on the contrary, the child seems easier and is less fretful. In many of these cases an alkali seems beneficial, and one part of lime-water may be mixed with three or four parts of milk, and given frequently during the day. (See *Lancet*, Jan. 22, 1870.)

Carbolic Acid in Carbuncle.—Dr. Purves describes the case of an old lady, aged 89, who suffered from an attack of this disease, and who had previously been in good health. She was in the first instance treated with emolient fomentations and poultices, applied to the inflamed spot, and the administration of quinine internally combined with rhubarb, and a mixture containing liquor of acetate of ammonia, and solution of muriate of morphia. No operative proceedings were at first adopted, but at a later stage the slough and the loose and undermined skin were removed with scissors. Then, in order to destroy the offensive effluvium arising from the corrupting mass, he applied, by means of a camel-hair brush, a mixture containing carbolic acid and glycerine, and continued this application after the core was detached, in order to stimulate the granulations to healthy action. The large, ugly, and gaping wound soon contracted, and the old lady made an excellent recovery. A little wine and a liberal allowance of animal food were allowed. Dr. Purves states that during a professional career of thirty years he has never had recourse to crucial incision, and all his cases have ended favorably. He considers it to be a secondary affection, and that its exciting cause is chronic digestive derangement. (Ibid. Jan. 29, 1870.)

The Administration of Chloroform.—Mr. Bader, the Ophthalmic Surgeon to Guy's Hospital, makes some important observations on the symptoms produced by chloroform and other anæsthetics, and on the treatment to be pursued in cases where danger threatens. The inhaler employed by him is a simplified modification of Snow's. Attention, he observes, should be paid to the colour of the blood which flows; if this turn black sud-

denly the chloroform or methylene should be removed, and the patient when struggling should never be resisted. Out of a very large number of cases, amounting in all to 3,224, some, as might be expected, presented serious symptoms. Forty-five are reported as having become blue in the face, and stertorous suddenly, with the breathing and pulse irregular; whilst seven are stated to have become pale suddenly with respiration and pulse stopping (to several is affixed the remark, apparently dead). In all these cases the chloroform was removed at once, and the patient *slowly and gently turned on his left side*, to cause the region of the heart and the left side of the face to rest upon the couch. Whether the support given to the heart, or a change in the position of the tongue, or some other change, be the cause of the cessation of the dangerous symptoms, Mr. Bader states he is unable to say. The fact of rapid recovery of patients when placed on the left side when in danger was observed accidentally, and for the last six years it has been the sole means adopted in such cases. (See *British Medical Journal*, Jan. 29, 1870.)

Treatment of Post-partum Hæmorrhage.—Dr. Cripps Lawrence thus describes the practice pursued in the treatment of ordinary labour, and of labour followed by hæmorrhage, at Queen Charlotte's Hospital. The patient is delivered on her left side, the uterus during and after the birth being followed down with the left hand, while the perinæum is supported with the right. The funis is then tied and divided, the patient is directed to turn on her back, the limbs are straightened, and a binder is applied *at once*, *before* the expulsion of the placenta; the greatest pressure being brought to bear about the level of the fundus uteri. In the event of flooding, actual or imminent, the following plan is adopted. Five or six ordinary babies' diapers are rolled up tightly one within the other, so as to make a cylindrical pad about eight inches long. This is placed on the left side over the abdominal aorta and the uterus, which has first been "defined," if possible, by grasping it firmly. The binder is now carefully applied over the pad, and the patient is placed on her left side. In ordinary cases no ergot is given to a primipara, but each multipara takes from fifteen to thirty minims of the extractum ergotæ liquidum in water, immediately after the birth of the child, as a precautionary measure. Should the above measures fail, smart slapping of the nates and vulva with cloths wrung out of iced water, and applied over the pubes, ergot in half-drachm or drachm doses, and brandy if necessary, and ice inserted into the vagina, are resorted to. The essential principle here advocated in the treatment of post-partum hæmorrhage is the employment of more or less compression over the abdominal aorta and uterus before proceeding to further measures. Dr.

Lawrence also points out the advantages of this mode of treatment in cases of uterine inertia. (See *British Medical Journal*, Jan. 29, 1870.)

Intestinal Obstruction treated by Atropia.—Dr. Philipson, in a paper read before the Northumberland and Durham Medical Society, records an interesting case where this mode of treatment, advocated by Dr. Fleming, of Birmingham, proved successful. The patient was a Danish sea captain, 41 years of age, who after suffering much hardship from stress of weather, was suddenly attacked, on the afternoon of the 25th of October, with pain and sensation of fulness in the left side of the abdomen. His bowels, when seen five days after the attack, had not been moved for nine days, and but scantily for a week before that time. Under medical advice he had taken an emetic two days before admission into the Newcastle Infirmary, and vomited freely four times. During the week previous to admission he also took various purgatives, and had seventeen injections administered without any result. The symptoms becoming urgent Dr. Philipson was summoned, and found him restless and apprehensive, with sharp pain in left hypochondrium, and general sensation of fulness in the abdomen. The pulse was 75, soft and regular; skin cool and prespiring; tongue moist and slightly furred; breath very offensive; abdomen uniformly distended and tympanitic. Firm pressure seemed rather to relieve the pain. No abdominal tumour or hernia; no evidence of disorder or disease about the rectum. Urine passed shortly after admission. From a general review of the symptoms the case was regarded as one of intestinal obstruction due to impacted fæcal accumulation with muscular spasm. He was ordered half an ounce of castor-oil, to be placed an hour afterwards in a warm bath, and while in it to have a warm water injection. The castor-oil was vomited shortly after being taken, and the injection returned without effect. The next day, after a restless night, continuing to take the same view of the case, he was ordered, every three hours, sulphate of magnesia a drachm, diluted sulphuric acid ten minims, liquor of sulphate of atropine five minims (Ph. B.,) tincture of orange peel a drachm, in an ounce of water. After the first dose he became easier, after the second passed flatus per rectum. At this time the pupils had become dilated. At 9 P.M., after the third dose, whilst in warm bath, and after warm injection, passed a small lump of hard dark fæces. Early on the following morning, eleven days after commencement of attack, passed a liquid motion, the symptoms of belladonna poisoning becoming tolerably well marked; the dose was therefore diminished to three minims, and on the night of the thirteenth day he passed a copious motion, lumpy, dark-coloured, almost

black, and very offensive. From this time no further difficulty in procuring evacuation of the bowels was experienced, and the atropia was discontinued after being employed for five days. Dr. Philipson considers that the most probable theory of the action of atropine in these cases is that it effects constriction of the smaller arteries, in consequence of which the supply of blood to the bowels is lessened, whereby the passive congestion is relieved, and healthy action promoted. Its action is distinguished from that of ordinary irritant purgatives in that it does not provoke increased secretion or peristaltic action of the canal above the obstruction, nor is its action followed by reaction or any disposition to constipation. (See *Medical Times and Gazette*, Jan. 29, 1870.)

Quinine in Acute Lumbago.—Dr. Glover directs attention to a mode of treatment of acute lumbago and other acute pains, generally supposed to be muscular, in the back and neck, which he has found to be singularly effective, though not described in books. Sir B. Brodie thought that in many cases of lumbago, where there was great inability to use the limbs, "the lower part of the spinal cord, or at any rate the nerves that arise from it," are at fault. On this view he occasionally cupped and gave calomel and opium. It is doubtful, Dr. Glover thinks, whether all such cases are, in the proper sense of the word, cases of lumbago, and not rather cases of inflammation of the cord or its membranes. But the point he wishes to insist upon is that in the very acute cases of lumbago, in which the urine is clear of lithiacal deposits, there is a strong neurotic or neuralgic element in the case, the proper remedy for which is quinine, in two-grain doses, every four or six hours; and he has verified this opinion in several very acute cases, in which alkaline mixtures, opiates at night, opiate liniments, and other soothing local applications, had entirely failed. After referring to two or three cases in which this treatment was successfully adopted, Dr. Glover observes that it is not alone in lumbaginous pains that he has noticed this power of quinine, but also in acute pains of the cervical or scapular regions, in some cases more or less tender on pressure, but very painful on movement. (See *Lancet*, Feb. 5, 1870.)

Extracts from British and Foreign Journals.

Chromic Acid in the Treatment of Menorrhagia.—Dr. Wooster, of San Francisco, remarks that menorrhagia, like menstruation, occurs from the whole mucous lining of the womb, and is merely an excessive exosmosis or transudation of blood from the vessels into the mucous follicles which they surround. From the open mouth of these follicles the blood is poured into the cavity of the womb, until the congestion of the uterine vessels is relieved in menstruation, or until the excessive setting of the menorrhagic current in menorrhagia is diverted—(*a*) by cessation of the heart's action, as in syncope; (*b*) by changing the plasticity of the blood, as in the use of iron and cod liver oil; (*c*) by contracting the uterus and the muscular coats of the vessels, as with ergot; (*d*) temporarily by mechanical means, as with a vaginal tampon, by which a clot is produced in the cavity of the womb, to be afterwards expelled by labour pains, or to undergo solution in a more abundant transudation of blood; or, finally, by any means which shall arrest the transudation of blood over the whole mucous surface. For example, by an astringent escharotic so mild in its astringency as not to coagulate albumen before it has had time to penetrate the full thickness of the menorrhagic membrane, and so promptly and efficiently escharotic as to condense the follicles so that no more blood can be poured into them through their patulous walls, or through such portions of them as are already denuded of epithelium by persistent hæmorrhage. Tincture of iron fails in this indication, because it immediately produces a clot which constantly increases from subjacent accretion; tannic acid or alum acts similarly; solid nitrate of silver produces a solid superficial eschar, which, falling off, leaves a new hæmorrhage surface, and furthermore it acts on the uterine tissue much as it does on the glans penis in chancre, producing increased congestion and painful erection, or in the womb a sense of extreme tension, described by the patient under the terms "bearing down," "fulness," &c.; zinc and lead lack the cauterizing power requisite, except the chloride of zinc, which is far too active if used in cauterizing strength, and dangerous to life from absorption if used in milder dilution. From these considerations Dr. Wooster states he was led to the employment of chromic acid, which, when absorbed into the blood, is probably as harmless as manganic, sulphuric, or ferric acids, with

which it is isomorphous. It is an oxidizing agent of slow but persistent action, and of considerable power on account of the facility with which it is reduced to the sesquioxide of chromium, isomorphous with sesquioxide of iron, and quite as harmless to the economy in certain doses. Dr. Wooster states he has now used it in several cases (one of which he gives), both for menorrhagia and leucorrhœa, with uniform and absolute success. In leucorrhœa he uses it in the strength of fifteen grains to a drachm of hot water, having first dilated the cervix with a sponge tent. One injection is generally sufficient when the general health is not seriously impaired. The injections in any event should not be repeated in less than four or five days. Unless the cervix be well dilated before the injection, the most alarming collapse may supervene in a few moments. The same thing will often happen, even if the cervix has been well dilated, unless the patient remain in bed at least twenty-four hours after the injection. Notwithstanding these *possibilities* of harm the chromic acid is perfectly harmless if used with the precautions suggested; and if it will cure a chronic uterine leucorrhœa it is certainly worth the trouble of being carefully handled, and its *possible* dangers are no greater than might result from the careless use of salt and water. If labour pains and tendency to collapse should supervene from the carelessness of physician or patient, hot fomentations to the abdomen, lavender and ammonia or brandy internally, with absolute rest in bed, will afford prompt and permanent relief. (*Hay's American Journal*, Oct. 1869.)

Treatment of Chorea.—Dr. Inman contributes an able paper to the Liverpool Reports on this disease, the cause of which he considers to be most frequently fright, and which he remarks is commonly associated both with cerebral and bodily debility. Can we hope, he asks, for a specific? Clearly not. We have, it is true, medicines which influence the muscles—conium paralyses them for example, and strychnine forces them to contract, but neither strengthen their fibre, nor add to their tone; in like manner belladonna, green tea, henbane, and opium, affect the cerebrum, but none of them enhance its quality. Can we improve a brain already upset by fright, by playing upon a patient's fears, and ordering a shower-bath, a birch rod, or any horrible punishment? Clearly not. Fright upon fright is more likely to kill than cure. There being no known specific, we are driven back upon general principles, and must endeavour to improve the constitution as a whole, and the muscles in particular. To fulfil the first indication we employ generous food, and abundance of it, and rapid improvement often follows; but in hospital cases the child is in many in-

stances too low to be readily raised; such cases require a long course of rest in bed, tonics, good diet, cod-liver oil, and the like. To fulfil the second indication, the only means we possess are, shampooing in the first instance, and regulated exercise when the muscular structures begin again to regain their firmness. To the first Dr. Inman thinks the profession has paid too little regard. Thought highly of by the Greek and Roman doctors, it has fallen into disrepute amongst their British successors, and is generally left to unlicensed practitioners; yet it is of no infinite value, and when employed in conjunction with medicated unguents is of great importance. Dr. Inman gives the details of a case affecting all the muscles of the right upper extremity, in which, after shampooing with oil of turpentine and olive oil in equal parts had been tried without effect, an almost perfect cure was wrought by the employment of a morphia ointment, containing one grain of morphia to a drachm of lard. Dr. Inman thinks it doubtful whether local chorea is ever perfectly cured in an adult. A strange part of the history of local chorea, and a fact which seems to indicate the existence of a cerebral rather than a local cause, is that if the shaking limb be compulsorily maintained at rest the corresponding member will be affected. When this is the case it is impossible to predict a recovery. There is not, indeed, any distinct indication for treatment. Blisters to the nape, ears, or temples, bromide or iodide of potassium, opium, &c. may be tried, and may possibly appear successful, but only for a time. Nature may cure these affections, as she sometimes does epilepsy, but art can do little either to persuade or coerce her to the task. (*Liverpool Medical and Surgical Reports*, 1869.)

Excipient for Pills.—Mr. S. B. Turney recommends, as a good general excipient for pills, two drachms of powdered tragacanth and six drachms by measure of glycerine. These are to be mixed in a mortar, and though at first semi-fluid, soon become a firm, tenacious mass, which keeps well, and but a small quantity is required, even with such substances as quinine or iodide of potassium. Pills made with it do not become hard. (*Pharmaceutical Journal*, Jan. 1870.)

Pyæmia.—Mr. Bell, of the Royal Infirmary, Edinburgh, records three cases of pyæmia of an acute character supervening in the first on trephining of the tibia for abscess. Amputation was performed when it was found that the tibia had necrosed. In the second and third the constitutional affection followed a compound fracture of the leg. In all perfect recovery took place; and in his remarks he observes that in all the cases he directed his attention, not to any hope of finding antidotes, or chemically acting on the poison (giving no specifics or mercury,) but, in the

first instance, to keeping the prima via in such a state as best might aid assimilation of nourishment; and secondly, giving the nourishment in such a form as might most easily be taken up. Milk, with lime-water, eggs, beef-tea, at short intervals and in small quantities, were the chief remedies; an occasional purgative enema, or even a purge of castor-oil when required, and really very little else. The first case, from his excessive weakness, had for some days eight ounces of port, and four ounces of brandy, but this was soon diminished. The second case was ordered quinine, but could not bear it, as it produced loss of appetite. The third case had hardly any drug during the whole of his long illness. Mr. Bell states he has more than once (in other cases) tried the use of the sulphites internally, as recommended by Dr. Polli, but was unable to satisfy himself that any benefit resulted. Indeed, their effect on the patient's appetite was generally so bad as very speedily to cause them to be given up. Hot drinks, not necessarily containing alcohol, even hot water, or hot milk and water, were found very useful in preventing rigors, which a cold drink would inevitably have hastened. Mr. Bell has further been led to lay great stress on the importance of delaying the dressing of the patient's wounds when his skin is moist or he feels a rigor to be imminent, and selecting such times as he himself will soon learn to recognise to be the most suitable, as involving the least risk of chill. Finally, he observes with truth that no case of pyæmia will ever recover without the most careful and devoted nursing. (*Edinburgh Med. and Surg. Journ.* January 1870.)

Transfusion in the Asphyxia of a New-born Child.—Dr. de Belina gives the details of a successful case of transfusion in a child under these circumstances. A Russian lady, in the eighth month of her pregnancy, was severely shaken by a collision on a railway. The pains of labour immediately supervened, and on removal to an adjoining hotel, Dr. Belina was called in. He found the membranes ruptured, the os fully dilated, and the head presenting. Sharp expulsive pains soon came on, but when the head was born, it was found that the neck was surrounded by two coils of the cord. It was found impossible to release them, and the cord was accordingly divided with scissors, and he endeavoured to terminate the labour. Unfortunately, the evolution of the shoulders lasted for some minutes, and the infant became asphyxiated and violet. The cardiac beats were much enfeebled. For ten minutes he fruitlessly applied the ordinary means of restoring suspended animation. The beats of the heart became still feebler, and he determined on resorting to transfusion. The difficulty, however,

here occurred that no one was willing to be bled for the sake of the child, and he therefore employed the blood flowing from the placenta of the mother, which was spontaneously discharged. The blood was defibrinated with a small piece of whalebone, and thirty grammes (about an ounce) was injected into the umbilical vein in several portions by means of a glass syringe. Immediately after the injection the infant shivered and presented fibrillar contractions of the muscles of the face, at the same time drawing a long breath. The beats of the heart became stronger, and the respirations regular. The next morning it took the breast, and is now a healthy child, nearly a year old. (*Gazette Medicale de Paris*, No. 2, 1870.)

The Use of the Sulphites in Puerperal Affections.—A series of long articles have been communicated to the *Wiener Medizinische Wochenschrift* by Professors Bernatzik and Braun, on the administration of sulphites and hyposulphurous acid to lying-in women, so strongly recommended by Polli, de Ricci, Cummins, and others, as agents by which fermentative processes in the blood could be arrested, and which, as a consequence, were well adapted for employment in zymotic diseases. The results of their investigations appear to be decidedly against their use. They are exceedingly nauseous to the taste, frequently producing inclination to, if not actual vomiting. They have a great tendency to produce diarrhœa of a violent character. The professors are unable to corroborate Polli's assertion that the sulphites diminish thirst and feeling of heat. For these reasons they think the remedies in question are decidedly contraindicated in puerperal affections. (*Wiener Medizin. Wochenschrift*, Nos. 94—99, 1869.)

Substitute for Cod-liver Oil.—The wide distribution of scrofulous diseases, especially in children, renders it a matter of great importance to discover remedies which will fulfil the purposes of cod-liver oil, and other anti-scorbutic drugs, and at the same time commend themselves to the palate of the little patients. Such a remedy M. Grimault, the well-known apothecary of Paris, believes he has obtained in what he has named the syrupus raphani iodatus. This contains the constituents of the syrupus antiscorbuticus of the Paris Pharmacopœia (raphanus, cochlearia, nasturtium, cortex aurantii, &c.), about half a grain of iodide to the ounce. This is stated to have proved very efficacious in the various scrofulous affections of children, such as glandular diseases, discharges from the ear, inflammatory diseases of the eye, photophobia, scrofulous diseases of the skin, scrofulous ulcers, spina ventosa, scrofulous diseases of the bones, and in chronic bronchitis and

bronchorrhœa, in which last its curative effects both in children and adults are very remarkable. (*Wiener Medizin. Wochenschrift*, No. 94, 1869.)

Veratrum Viride in Pneumonia.—Professor Hertz communicates two cases of pneumonia, in which about a seventh of a grain of the extract of veratrum viride for a dose every hour was employed; vomiting was induced by the remedy after the third dose in one case, the pulse, respirations, and temperature speedily falling. In the other a similar rapid diminution in the action of the heart and lungs, and of the animal heat before vomiting occurred, was observed; both cases made a good recovery. (*Bulletin de Therapie*, lxxvi. p. 468.)

Caution against Plugging the Vagina with Perchloride of Iron.—Dr. Tissier has recently reported an interesting case to the Parisian Medical Society, showing that this remedy should be employed with great care. The patient, who was forty years of age, previously in good health, was suddenly attacked with slight menorrhagia. This lasted for three weeks, and then greatly increased in severity, nearly three pints of blood being lost. Great pallor and exhaustion ensued, the pulse being imperceptible. The belly was covered with cold compresses, and the vagina was plugged without the use of the speculum, by means of three balls of charpie dipped in perchloride of iron, and these again were followed by the introduction of more charpie dipped in a solution of one-fourth of the perchloride of iron salt, and three-fourths water. She was directed, in addition, to take, every ten minutes, ergot, cold soup, and ice, and subsequently tea with rum. After two hours the discharge of blood had entirely ceased, and on the following day the superficially situated masses of charpie were removed. After forty-eight hours, the charpie dipped in the pure solution was removed, the patient not having complained of any pain. Five days later she stated she was suffering from violent burning pain in the vagina. Emollient injections were used with advantage, and seventeen days after the plugging, a large portion of mucous membrane sloughed away. The recovery was tedious; six weeks after menorrhagia again occurred, with the recurrence of the usual menstrual epoch, and on examining the vagina, a very resistent fibrous ring was discovered, which scarcely permitted the passage of the little finger. Two centimetres higher up was a second ring, to which the collum uteri was attached. (*Wiener Medizinische Wochenschrift*, No. 95, 1869.)

Arseniate of Antimony in Pulmonary Emphysema.—Dr. Koch recommends the employment of this remedy in emphysema, not only on empirical grounds, but because he considers it may reasonably be regarded as a nervine and muscular

tonic. Hence, since in emphysema the pulmonary vessels are dilated and inelastic, rendering them incapable of contracting in the act of inspiration, the administration of the arseniate effects improvement through its invigorating influence on the contractile fibres, enabling the respiratory acts to be more easily accomplished. Again, the arseniate is particularly efficacious in those cases in which there are frequent attacks of asthma; for these are induced either by centripetal or centrifugal irritation of the spinal cord and medulla oblongata. The *point de depart* of the attacks is either peripheric or central. It is peripheric when the branches of the pneumogastric are acted on at their extremities by any cause, as vitiated air, a temperature too cold or too hot, which may lead to congestion of the neurilemma, or otherwise interfere with the nervous current. In such cases the arseniate of antimony, employed in the form of fumigations, produces excellent results. Both metals have an elective action on the lung, and are eminently sedative and capable of relieving congestion. When, however, the attacks of asthma are due to emotion, or to some other centrifugal action, there is little chance of benefit from this mode of treatment. The arseniate is employed in the form of cigarettes, containing a definite proportion of the drug, and the smoke taken into the mouth is slowly and gently inhaled into the lungs. (*La Presse Medicale Belge*, No. 5, 1870.)

Galvano-Caustic Method of removing Tumours in the Larynx.—Dr. Reichel, of Breslau, communicates the results of his experience in reference to this mode of treatment, which he states has proved of the greatest service in his hands. It is available for all sorts of tumours, even when they are multiple or have a very broad base, and there is no danger of subsequent loss of voice. A good battery and a skilful operator are, however, indispensable. The instruments required are few, simple, and delicate, the chief being a cutting-loop of wire and an extremely fine galvano-cautery, thus contrasting favourably with the knife, scissors, and crushing instruments demanded for other methods. The pain suffered by the patient is very small, scarcely amounting to more than a sensation of heat. The action may be rendered very limited indeed. The time required for the operation is also very small. The instrument is introduced whilst cold, and as soon as the cautery is in contact with the surface, or the tumour is enclosed in the wire-loop, these can be brought to a white heat, and as instantaneously cooled. There is no hæmorrhage, and no disagreeable after-effects have been observed. Unless the growths are of a malignant nature no recurrence takes place. On the whole, he coincides with Turck that for the treatment of tumours of the

larynx the galvano-caustic method is indispensable, and constitutes one of the greatest triumphs of modern surgery. (*Berliner Klinische Wochenschrift*, No. 51, 1869.)

Cæsarean Section performed after the Death of the Mother.—Dr. Beckmann records an interesting case of this kind. In some preliminary observations he refers to a case in which the operation was performed successfully by a midwife on a woman struck dead by lightning, and quotes the observation of Henning: "That the results of the operation performed *post mortem matris* are but little favourable to the child, but that it is most likely to succeed when the death has followed some shock to the nervous system, as in apoplexy or traumatic injury to the brain and spinal cord; that it is less likely to terminate favourably to the child when the death-agony has been prolonged; and that it is most unfavourable of all in cases of suffocation with carbonic acid gas." The case given was that of a woman in the eighth month of her pregnancy, who had lost her consciousness during the pains on the previous day to that on which Dr. Beckmann was called in, and had never regained it. She was 25 years of age, a primapara of robust make, and with very ruddy cheeks, which appeared to be swollen. The conjunctivæ were ecchymosed, the pupils small, and bloody foam appeared about the mouth; there was great restlessness, accompanied by violent chronic spasms of the upper extremities. Lower extremeties very œdematous, vesicular rale over the lower lobes of both lungs posteriorly. Pulse 120, full. The child was on examination found to be alive. Delivery proceeding, the os uteri slightly dilated, head presenting. Venesection was practised, half a grain of morphia was injected subcutaneously, a purgative enema administered, and ice applied to the head. After four hours comatose symptoms occurred, with loud tracheal rattle, and in a few minutes she died. Remembering the investigations on animals made by Breslau, in which no instance of recovery of the fœtus took place when more than five minutes had been allowed to elapse after the death of the mother, Dr. Beckmann at once applied to the husband to be allowed to perform the Cæsarean operation. Permission was granted, and five minutes after the last inspiration and contraction of the heart, the section was made with an abscess lancet, no other instrument being at hand. The child on being withdrawn weighed four pounds, was apparently dead, the heart scarcely beating perceptibly. In the course of two and a half hours it began to breathe with regularity, after prolonged and varied modes of promoting artificial inspiration had been adopted. It is now growing up a fine healthy child.

The operation was performed on the 4th March, 1867. (*Berliner Klinische Wochenschrift*, No. 51, 1869.)

The Treatment of Psoriasis.—Dr. Passavant, of Frankfort on the Maine, in a letter to Professor Hebra recommends, as a specific remedy for psoriasis, the employment of an exclusively animal diet. Dr. Passavant's first experiment was made upon himself. He has suffered for twenty-five years from this disease, which ultimately affected the entire surface of the body, notwithstanding the trial of all the ordinary remedies. When the affection was at its height, both in point of extent and severity, he experimented on the effects of an exclusively animal diet: immediate improvement was observed, and after a few weeks he was perfectly well. Dr. Passavant states he has seen another case of psoriasis treated in a similar manner, in which the scabs entirely disappeared in the course of six weeks. On the patient's returning to an ordinary diet a relapse occurred, which was again overcome by a return to an exclusively animal diet. Dr. Caspari, in some observations on this mode of cure, observes that he has had no opportunity of trying it, but that he is himself an example of the curative effect of a precisely opposite plan of treatment. It appears that, like Dr. Passavant, he has been for full thirty years subject to psoriasis, affecting the whole of the body, together with the upper and lower extremities. He also had tried all kinds of remedial means without effect; but some years ago, in consequence of a chronic catarrhal affection of the stomach, he was unable for many months to take anything for breakfast beyond a cup of milk with a little bread, soup and rice for dinner, and milk porridge for supper. His practice being considerable, this diet was insufficient to maintain his physical powers, and he gradually lost weight, but coincidently his psoriasis vanished: it was starved out. (*Deutsche Klinik*, Dec. 18, 1869.)

Waters of Plombieres in Dyspepsia.—M. Bottentuit gives detailed accounts of several cases of this form of disease, in which the disordered condition of the stomach was accompanied by a considerable degree of flatulence and much pain during digestion. In one of these cases all exercise, or even the standing position, exasperated the pain, which was of a local and constricting character, distinct from the pain often accompanying pyrosis, and that of hysterical gastralgia. The patient had had four children, and was anæmic. The continued use of the waters, both internally and in the form of baths, effected in all the cases, if not a perfect cure, great alleviation in the symptoms. (*L'Union Medicale*, Jan. 29, 1870.)

Notes and Queries.[1]

Dr. Marston.—This gentleman has written to complain that our printers have not done justice either to the style or the grammar of his note to us, published and commented on in the *Practitioner* for February. We are very sorry if this is the case, but for the life of us we cannot detect these alleged printers' errors. And we will go so far as to say that Dr. Marston seems to us quite needlessly sensitive about his literary reputation, for the letter appears to us, apart from its opinions, with which we cannot agree, an able and well-written production.—Ed. Practitioner.

The Poisonous Dose of Chloral.—We have received the following important note from Dr. J. R. Reynolds: "I was called to see a lady of middle age, who had, for the relief of neuralgia, taken hydrate of chloral.

On the third day before my seeing her she had taken gr. 10 and gr. 15, and had found much relief. On the day before she had taken a larger dose with good effect.

On the day of my being summoned the dose had been increased to gr. 45 or gr. 50, and there had followed complete relief of pain; but in the course of an hour some 'faintness' was felt, and when I saw the patient this had increased to an alarming degree. Two hours had passed since the last dose was taken, and I found the patient with cold extremities; an excessively rapid, weak, irregular, and intermittent pulse; jactitation of limbs; an intolerable sense of sinking, and oppression at the pit of the stomach; gasping breathing, and confusion of thought.

I observed at this time, and for three-quarters of an hour subsequently, that the radial, temporal, and tibial pulses were all of the charcter I now describe—frequent, weak, irregular in

[1] The Editor, being desirous of making this department a useful medium of communication between practitioners, will be glad to receive short notes on theoretical or practical points in therapeutics,—brief jottings on those numerous queries which suggest themselves from time to time to a medical man as he "goes his rounds," but which he has neither the time nor, in some cases, the opportunity of answering. The Editor does not pledge himself to reply to every question addressed to him, but he hopes to make the "department" the means of supplying the information required; and this he can only effect by the hearty assistance of his readers.

both force and rhythm, and frequently intermittent—but that the heart was acting regularly, although with increased frequency and diminished force.

Stimulants, with white of egg, were administered freely, warmth was applied to the extremities, sinapisms were put on the cardiac region, fresh air was introduced plentifully into the room, and at the end of an hour from my first seeing the patient the pulse had become much steadier, though still very frequent and very weak. The syncopal feeling had diminished, the feet were warm, and there was a tendency to sleep.

This state of comparative freedom from urgently dangerous symptoms lasted for longer than an hour, when—without any apparent cause—they returned with increased severity. The patient now seemed in the gravest danger. The superficial pulses were almost imperceptible, and when they could be detected presented the character I have described. Still the heart was regular in its beat, although feeble, and intensely rapid in its pulsations. The mind wandered much; there was utter prostration of muscular strength, the limbs being extended, the head low, and the aspect was at times that of impending dissolution. There was a great dyspnœa, a sense of suffocating oppression at the base of the chest (in front), and urgent thirst.

The treatment previously adopted was again pushed vigorously, and at the end of an hour and a half relief was obtained, and sleep followed. The next morning I found the pulse quite regular, and of its normal frequency.

I have written this hastily, but pray put it in your own way, and make any or no use of it as you think best.

The points of interest that occurred to me were: 1st, the dose; 2d, the time between its administration and the appearance of symptoms; 3d, the recurrence of symptoms after their temporary cessation; 4th, the curious effect on the vessels, which was obviously not due to effect on heart; 5th, the relief by food and stimulant. I found that the albumen (of two eggs) was that which was followed by a calming effect, and a tendency to sleep."

Compulsory Vaccination.—Mr. F. W. Parsons, of Wimbledon, writes to us as follows:—"Dr. Turner, in his excellent 'Plea for Compulsory Vaccination,' suggests the probability of the lymph obtained from a second vaccination being enfeebled. I think I can bear testimony to it. When I was public vaccinator, I tried the experiment in several cases, and although the vesicle the lymph was taken from seemed quite perfect, the result was invariably *nil*, or an imperfect and blighted vesicle at the best: when these subjects were vaccinated with primary lymph, they passed through the stages quite naturally."

Guaiacum as a remedy for Cynanche Tonsillaris.—Mr. J. Carter, of Petty Cury, Cambridge, sends us this note :—"I can very confidently confirm, by my own experience, the opinion of Dr. Atkinson, as to the value of guaiacum in the treatment of cynanche tonsillaris. I have been in the habit of employing the remedy for the last twenty years, and I regard it as well nigh a specific in this affection, if administered before suppuration has actually commenced. Moreover, I believe that its use, even after matter has formed, limits the extent of the suppuration, and mitigates the severity of the attack. I give the medicine in larger doses than Dr. Atkinson prescribes, namely, from ℈j to ʒ ss :—

℞ Pulv. G. guaici ʒ ij—ʒ iij.
Potass. chlorat. ℈ ij.
Pulv. trajac. comp. ʒ ss.
Syr. simpl. ʒ iij.
Aquæ ad ʒ viij.—M.
St. ⅛th part every four hours.

"As a gargle I prescribe a weak solution of citric acid sweetened with honey.

"I have no very definite idea as to the *modus operandi* of the remedy, but I believe it to have some direct action upon the mucous surfaces to which it is applied. When given in half-drachm doses it usually acts as an aperient, and I think those cases do best in which such effect is produced.

"Guaiacum, as prescribed above, will also be found very serviceable in other forms of inflamed sore-throat, especially those which are marked by a reddened and swollen condition of the fauces, either with or without ulceration.

"I claim no originality as to the employment of guaiacum in throat affections. Reference to its value as a remedy was made by Dr. Bell, of Barhead, twenty years ago ; also by Dr. Bryden, in *Brit. Med. Journ.*, 1857, p. 967.

"To this testimony I gladly add my own, as I regard the medicine of greater value than any other."

The Treatment of Vaginismus by forcible Dilation.—We perceive that we were last month guilty of a considerable injustice to Dr. Wharton P. Hood. We inadvertently quoted a paragraph by Dr. Tilt, in which the latter assumed that a case recently published by Dr. Hood in the *Lancet* had been treated upon principles previously laid down by Dr. Tilt. Such was not the case. Dr. Tilt, it appears, had recommended (in opposition to the surgical division of the sphincter vaginæ) forcible dilation with the two thumbs, and keeping a large metal bougie in for some days afterwards. Dr. Hood, who had seen nothing of Dr. Tilt's writings on the subject, had to treat a patient in whom

persistent vaginismus had entirely prevented effective intercourse, though she had been married some years. He did this by the forcible introduction of a speculum, which was repeated several times; the result being that the vagina was permanently dilated to such an extent that natural intercourse took place, and pregnancy followed.

HYDRATE OF CHLORAL AS A HYPNOTIC.—Mr. Francis Goolden, of Maidenhead, has kindly communicated a case bearing on this point. He tells us that in a paralysed gentleman, of middle age, who from the extreme contraction of his lower limbs, and from other causes, suffered great pain, and was hardly able to get any sleep, he tried it in a half-drachm dose; the result of this first experiment being that the patient had a tranquil sleep of twelve hours' duration—and this after various other narcotics had failed to give any relief. But it was disappointing to find that on subsequent occasions, although the chloral was given in large doses, sleep was not obtained, but the patient was merely thrown into restless semi-delirium. It may be, that beyond a certain dose chloral loses its proper *hypnotic* effects; and, indeed, we are rather inclined to think that this will prove to be the fact.

PUERPERAL CONVULSIONS TREATED WITH HYDRATE OF CHLORAL, AFTER FAILURE OF BELLADONNA AND BROMIDE.—Mr. Hay, of Caledonian Road, sends the following:—

"Mrs. A—— was confined with her first child on February 9th, at 7.30 A.M.; it was a breech presentation, but no difficulty was experienced. At 12.30 P.M. she was suddenly seized with convulsions, and continued having three or four attacks every hour, each increasing in severity, till 7 P.M., when I gave her 60 grains of hydrate of chloral: she had an attack soon after. She then slept quietly till 1 A.M., when she had another attack, but much milder: I gave her 30 grains more of the hydrate. After that she had no more convulsions, but continued to sleep till about 3 P.M., except at short intervals, when she was roused to take nourishment. When she awoke, she complained of great headache, which continued till next morning; she then complained of everything appearing unnaturally large. She has had no bad symptoms since."

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[1] Any of the foreign works may be procured by application to Messrs. Kelly, Piet & Co., Publishers and Importers, 174 West Baltimore street, Baltimore.

THE PRACTITIONER.

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Original Communications.

ON THE EFFECTS OF COMPRESSION OF THE VAGUS NERVE IN THE CURE OR RELIEF OF VARIOUS NERVOUS AFFECTIONS.

BY AUGUSTUS WALLER, M.D., F.R.S. OF GENEVA.

Laureat of the Institute of France (Académie des Sciences).

It would appear that the effects of pressure on the large veins of the neck were well known to the ancients. Caspar Hoffmann[1] states, on the authority of Benedictus, "that the Assyrians were in the habit of tying the veins of the neck so as to cause insensibility while performing circumcision on adults." Whatever obscurity may be attached to this passage, it is certain that Aristotle[2] mentions "that if the veins of the neck become compressed exteriorly, one sees a man shut his eyes and fall down senseless as if he were strangled, although he is not so." Serapion likewise mentions the influence of pressure on the vessels of the neck for the relief of headache.

But although these facts may be of interest in the eyes of the scholar, and excite his attention from the halo of antiquity with which they are invested, it is not on such grounds that they can claim to be noticed by the physician. We must ap-

[1] Caspar Hoffmann de Thorace (ed. 1825), p. 77.

[2] Aristotle, Histoire des Animaux, Traduction Française de Camus (édition de 1783), p. 127.

proach a much more recent period before we find these facts stamped with any of the signs requisite for medical currency. Dr. Parry, of Bath, was the first to apply practically what he termed compression of the carotids for inducing sleep, and for the immediate relief of attacks of hysteria and even epilepsy.[1]

In 1848 I published some cases which occurred in my own practice, showing the advantages of compression of the carotids for the removal of violent headache, and of epilepsy, hysteria, &c.[2]

Dr. A. Fleming also has treated the subject of compression of the carotids in a paper which I regret that I am unable to refer to here.[3]

All these authors, including myself, invariably attributed the results produced to the decreased circulation of the blood in the brain consequent on the compression. There was a large pulsating artery full of blood, by pressing on which so as to interrupt the passage of the blood to the brain, the effects observed were caused. It was a case of *post hoc ergo propter hoc*, which, together with our knowledge of the cerebral functions, appeared to afford a most satisfactory solution of the problem.

Only a much closer and more physiological examination could reveal the flaw in this apparently unbroken chain of evidence. In 1861, when making an observation on myself to ascertain if I could obtain on the vagus and sympathetic nerves at the neck similar symptoms to those obtained on animals by irritation of their nerves by galvanism, I quickly perceived that I could reproduce to a greater degree than I might have expected many of the effects obtained on animals.

Before entering more fully into the subject, I may be allowed to recapitulate the grounds on which I form my opinion that *the effects observed were owing to the irritation of the vagus and sympathetic nerves.*

In the first place, with regard to the supposed influence of the carotid arteries. Sir Astley Cooper showed that on animals the common carotid artery may be tied without producing any perceptible effect on the heart's action.

Professor Miller, after numerous experiments on the same

[1] Parry's Pathology. Passim, 1825.

[2] Journal of Physiological Medicine, 1848.

[3] British and Foreign Quarterly Medical and Chirurgical Review, vol. xxx.

subject, came to the conclusion that the ligature of both carotids produced no bad effects on animals.

I have repeatedly tied or compressed both these arteries in animals without observing the least signs of disturbance in the heart's action, or in innervation.

On man one of the carotids has frequently been tied, and in the great majority of the cases no immediate symptoms of a marked character have been witnessed; the secondary symptoms which have occasionally supervened, such as convulsions, coma, collapse, &c., being of a totally distinct nature, and generally attributable to lesions of the brain. In some instances it is true that impaired eyesight and syncope have immediately followed the ligature of the artery; but these symptoms were evidently owing to the vagus and sympathetic nerves having been included in the ligature of the artery, and when such is the case in animals the symptoms are found to be similar.

Even both carotids have been tied by Mussey[1] on man at a few days' interval with complete success, without any unfavourable symptoms, either immediate or secondary, making their appearance.

I will now briefly state the functions of the vagus and cervical sympathetic nerves.

The vagus nerve descends from the medulla oblongata, whence it takes its origin, close to the part termed the "nœud vital" by Flourens. Near its origin there exists a ganglion, and lower down another ganglion or ganglionic structure, near the point where it gives off the superior laryngal nerve.

In this interganglionic space the vagus receives a large branch from the accessorius, the fibres of which become intimately blended with those of the true vagus, viz. those arising from the medulla oblongata. As it passes downward to the stomach, the vagus is at the neck in such close juxtaposition with the carotid artery and internal jugular vein that we cannot compress the artery without being liable to include the nerve in the pressure. The vagus, as we all know, sends off numerous branches to the lungs, the heart, the stomach, &c.

On galvinising the trunk, of the vagus, the larynx, the stomach, and the bronchial tubes are made to contract, and the ac-

[1] American Journal of Medical Sciences, 1830

tion of the heart is completely stopped; *all which effects are evidently owing to the motory fibres which the vagus contains*, and which, as I have elsewhere shown,[1] are nearly, if not wholly, derived from the branch of the accessorius.

Besides these motor fibres, the vagus contains sensory or excito-motory fibres belonging to the pure vagus, and arising, as we have seen, entirely from the medulla oblongata.

The influence of these fibres may be shown after the division of the nerve by galvanising the upper segment. When much pain is excited we have vomiting, coughing and disturbance of the heart's action. The fibres of the true vagus may therefore be regarded as collecting all the sensory and excito-motory power from an immense territory formed by the internal surface of the lungs, larynx, heart, and stomach, each different fibre joining the trunk of the vagus, which enters the central nervous system at the medulla oblongata.

When we examine the structure of its fibres, we find them so exceedingly minute that their number is much greater than in an ordinary spinal nerve of the same dimensions, probably twenty or thirty times greater.

Closely connected with the vagus at the neck we find also the cervical sympathetic cord, which is derived from an extensive portion of the spinal cord named by myself and Budge the cilio-spinal region, the centre of which is situated near the origin of the second dorsal pair, together with which it arises from the spinal cord. After separating from this pair, these fibres form the principal part of the cervical sympathetic that ascends upwards in close adhesion with the vagus.

The fibres of the cervical sympathetic are almost entirely motory, and when they are galvinised we observe *dilatation* of the pupil and contraction of the vessels of the face and ear, with decreased temperature of those parts, and at the same time widening of the eyelid and protrusion of the eyeball. After section of this nerve, *contraction* of the pupil is produced, with dilatation and increased vascularity of the arteries and increased temperature of the face and ear.

Before I treat of the effect of pressure on the vago-sympathetic nerve, I will consider the symptoms produced by this means on

[1] Proceedings of the Royal Society, vol. viii. p. 69.

other nerves more accessible to observation, such as some of the mixed spinal nerves.

When compression, for instance, is applied over the ulnar nerve at the elbow, we find that a certain degree of pressure generally causes pain referred to the little finger and inner side of the hand. If the pressure be continued the pain increases, and symptoms of numbness, anæsthesia of the skin, and paralysis of the muscles supplied by this nerve gradually appear. When the pressure is removed these symptoms disappear, leaving behind a sense of fatigue, which remains for some time. When the nerve has been further irritated the whole limb frequently feels fatigued, especially over the deltoid muscle.

The localisation of the sensation in the little finger and side of the hand is an illustration of the aphorism, that two pains arising at the same time the greater obscures the lesser; for the like occurs with other nerves, such as the radial, the median, and the external popliteal, the sensations being referred to the most sensitive region supplied, while the other parts supplied by these nerves remain insensible.

With respect to individual differences, these are very great, pressure on the ulnar nerve causing the most sharp pain with some persons, while with others the nerve appears as insensible as a tendon. Numbness and paralysis are easily induced in some instances, while in others they are difficult to obtain. I have known the pain from pressure of the ulnar nerve to be so great in some individuals as almost to cause a state of syncope from the shock to the nervous system.

When the vagus nerve is compressed beneath the integuments in animals in the same manner as in man, without dividing the skin, the symptoms produced are more perceptible than when after the nerve has been exposed, which is probably attributable to the functions of the nerve having been disturbed by exposure.

Professor Bert, of Paris, has made some experiments on the effect of very strong galvanism of the vagus. He divided the par vagum, and on one side strongly galvanised the upper segment. According to him a very strong shock was liable to cause death without convulsions. We find, however, that such results were only obtained on animals already very exhausted from the division of the par vagum having been made some

days previously, or in other words, when the animals were half dead.[1]

The symptoms belonging to the vagus are, 1st, respiratory; 2d, gastric; 3d, cardiac; 4th, laryngeal—these, however, from their hidden nature, are inaccessible to direct observation except by means of the laryngoscope; 5th, those of nervous shock or sideration, which belong to all the sensory nerves in a greater or less degree according to individuals, but which, as we have seen, are more evident on the vagus than with other nerves, as might be expected from the importance of its functions and of the part of the spinal cord from which it springs.

In addition to the symptoms belonging to the vagus we have those pertaining to the cervical sympathetic, viz: 1st, Influence on the iris; 2d, Influence on the vessels of the face and ear; 3d, Those relative to the eyelids and degree of protrusion of the eyeballs.

We have now to see how far pressure applied to the neck corresponds to the various requirements of the case, or in other words, to what extent the symptoms observed on man correspond to those on animals and to the anatomical distribution of the vagus.

Compression of the vagus on one side may be applied at various points of the neck from the angle of the lower jaw downwards, but as a rule the most convenient spot to compress is close to the angle of the lower jaw, and for a short distance above and below, where the nerve and vessels are most exposed and more easily pressed back upon the hard part behind.

Lower down the neck the sterno-mastoid muscle and thyroid are considerable obstacles to the application of a sufficient amount of pressure. Where the vagus is accessible low down in the neck, it is desirable, in cases where compression is requisite, to try its effects at this region if it is intended to subdue gastric symptoms, such as vomiting, &c., as I have sometimes found that compression low down in the neck affects the stomach more than when it is applied near the maxilla.

The pulsations of the carotid artery supply us with the best guide for finding the nerve. I generally prefer compressing with

[1] Bert, Des Effets de la Section du Nerf pneumogastrique. Archives de Physiologie, No. 3, 1869.

the thumb over this vessel, the other fingers resting upon the posterior part of the neck. In most cases the first indication of our compressing the nerve itself is a sensation of a want of air, followed by a deep and laborious respiration. This heaving respiration which continues to be experienced may be considered as a sure sign that the nerve has been found, and that its innervation is already affected. It is not always so readily detected, and we must often try several points of the neck until we obtain some symptoms of its presence.

At the same time that the respiration is thus affected the heart's action becomes much disturbed and its rhythm altered, being weakened and irregular, although somewhat accelerated. This diminished power of the heart is easily detected by the weakness of the pulse at the wrist, and by the pulsations of the carotid artery under the thumb, where they are felt fluttering and irregular.

A continuance of the pressure at the neck, after producing the above symptoms, soon causes a retardation of the heart's action to the amount of five or six pulsations in a minute. These motor effects on the heart are frequently accompanied by a certain degree of uneasiness and sense of sinking over the præcordial region.

The gastric symptoms are in general very slightly felt. In some persons, however, a feeling of uneasiness is experienced over the whole of the epigastrium. These symptoms sometimes amount to nausea, and even an effort to vomit, and are often attended by increased peristaltic action of the stomach and intestines, as shown by the borborygmi and other symptoms of flatulency.

Case I.—On my own vagus I find the most sensitive point to be a little below the angle of the inferior maxilla. The pressure is performed on one side, as I have already stated, by bringing the hand in full pronation, and placing the thumb on the artery and the rest of the fingers in a row behind the neck. A few movements of the thumb enable me to find a sensitive place indicative of the presence of the vagus. When this is discovered moderate pressure soon occasions a deep-seated sensation of a peculiar benumbing character in the head, which scarcely amounts to pain. The sense of languor and of fainting, as if

"going off," is so manifest, that if the head and body be not supported, and if pressure on the nerve be continued, complete syncope ensues. Simultaneously other symptoms of a respiratory, cardiac and gastric nature make their appearance. The respiration, at first arrested for a few moments, becomes heaving and retarded, the heart's action, depressed in force, is disturbed and irregular, as may be felt by the pulsation of the carotid under the finger. The gastric symptoms are marked uneasiness over the stomach, sometimes amounting to nausea and even vomiting.

After the pressure is removed the symptoms gradually decrease, the respiration and the heart's action return to their previous condition, but the nausea, uneasiness of the stomach, and flatulence remain for some time, particularly if digestion is in full action at the time. Lassitude, languor, fatigue, lowness of spirits, and want of repose, will still remain for an hour or two; or if walking is attempted, there is uncertainty in the gait from apparent fulness of the head, which is very uncomfortable.

In the corresponding ear there is frequently experienced a sense of warmth and tingling, which lasts for one or two hours after.

Case II.—Dr. G. Julliard, Surgeon to the Hopital Cantonal at Geneva, aged 36, in perfect health. Pressure near the angle of the jaw was made on one side of the neck. After about a minute there was a sense of oppression, and the heaving of the chest commenced: the pulse became weakened and irregular; the countenance became very pale, and as fainting was coming on the pressure was removed, and Dr. Julliard quickly recovered, the respiration returning to its normal standard. Although the respiration had become quite normal, Dr. Julliard remained pale and rather languid, and on walking felt a degree of unsteadiness, which he described as the "demarche titubante," which lasted for several hours after.

Case III.—Joseph Chevalet, aged 18. Compression of the left vagus was applied above the angle of the lower maxilla. After about a minute the heart's action was enfeebled and irregular, and the corresponding pupil became considerably dilated. The respiration soon became oppressed, and the patient complained of want of air and faintness. At this moment the pulse

at the wrist could scarcely be felt. These symptoms quickly disappeared after the pressure was removed. During the compression, and some minutes after, the cheek and ear of the corresponding side were more pale than those of the opposite side. The temperature of the cheek and ear was likewise much lower on the left side, showing a difference of at least three or four degrees centigrade, as near as I could judge in the absence of a thermometer.

Case IV.—Dr. Prevost had the vagus compressed above the angle of the jaw about three or four hours after eating. Complained of its being very painful, and it was maintained for a very short time, about a minute or two. Experienced a sense of faintness and nausea corresponding to the region of the stomach. No difference could be detected in the size of the pupils, but he mentioned having felt particularly a sensation of protrusion of the eyeball. As in the preceding case, there was for some minutes after removal of the pressure some pallor on the corresponding side of the face with a fall of temperature, though much less perceptible. Thermometric measurement by means of one of Geissler's delicate thermometers showed a difference of 1·5 to 2 degrees centigrade in favour of the side non-compressed.

As regards the sense of protrusion of the eyeball, it is evidently necessary, before deciding whether this is a mere subjective phenomenon, to submit the question to careful measurement. It is unnecessary to point out the interest in determining this point and its bearing on the question of Grave's or Basedow's disease, where the cause appears evidently connected with irritation of the cervical sympathetic.

Case V.—Mrs. T——. Two minutes after the application of pressure high up above the angle of the jaw there was buzzing and confusion of the head; no pain, but giddiness, and a gradual sense of faintness and "going off." There was a feeling of suffusion in the head, extending over the lumbar region and to the ends of the fingers, where the sensation was somewhat like "pins and needles." Five minutes afterwards, when the pressure had been removed, a sense of nausea ensued almost amounting to sickness, with borborygmi. A want of firmness in the legs, causing a tottering gait, supervened, and

the belief of the patient was, that if pressure had been continued vomiting would have resulted.

Case VI.—Mrs. Y—— had been subject for some years to attacks of acute gastritis, during which the principal means employed to reduce the strong local pain, intense vomiting, nausea, and intolerance of most all injesta, were local depletion by leeches, and later in the attack by vesication (with agents not containing cantharides).

Gradually the acute attacks subsided, leaving an irritable stomach, and the diet was obliged to be confined to animal food and stale unfermented bread. Nothing cold could be tolerated by the stomach. When from any neglect of these precautions the symptoms attained any degree of intensity, vomiting was induced mechanically and the offending matter ejected.

During an attack of spasmodic vomiting it was deemed advisable to administer muriate of morphia, which was repeatedly rejected before it reached the stomach. During one of the paroxysms I applied pressure on one of the vagi, and to my surprise found the vomiting subside for a time; but returning shortly after, I soon found, after repeated attempts, that vagal compression would not permanently subdue the vomiting. Changing my tactics, I merely employed it as a means of inducing tolerance and rest for a sufficient time to allow of absorption. Half a grain of morphia was administered into the stomach, which was kept quiet from vomiting by occasional pressure on the vagus for about an hour. Although nausea still remained, at the end of this time the effect of the sedative became manifest; the vomiting had ceased, and finally the patient slept, and the attack was subdued.

Although this case appears to me to present some interest, as showing the way the two sedatives may occasionally be combined so as mutually to assist each other in certain cases where an opiate cannot be administered by enema or subcutaneous injection, it was not so much on this account that I have introduced it.

On expressing my satisfaction at the improvement in her health, and the increased range in the articles of food that she was able to use with impunity, I found that she had been in the

habit of applying vagal compression to great advantage, thus making an application both novel and interesting. Whenever any considerable irritation of the stomach was felt after eating, instead of waiting until the symptoms became severe, she immediately applied slight pressure on the vagus, thus arresting the symptoms at their *debut*, and digestion was completed without further inconvenience.

Whether this novel mode of applying sedation to the stomach can be generalized I am unable to say, but it was reasonable to expect some such result. In this case it has been the means of allaying distressing symptoms, and the patient has consequently improved in strength under its influence.

Case VII.—Madam F——, after an accidental fall while out walking, suffered severe pain in the head, the nape of the neck, and the sixth and seventh vertebræ of the dorsal region. This latter spot had been the seat of much spinal irritation, sometimes confined to the spine, at others extending its influence to the intercostal nerves, causing severe pleurodynia, at other times radiating down the left upper limb. Complete rest in bed was enjoined, with aperients, hot fomentations at the nape of the neck, and dry-cupping over the spine.

On the following day there was exacerbation of the symptoms in the head and dorsal region; much mental excitement, and extremely severe pains over the frontal and parietal bones. The dorsal pain had extended down the left arm; the ulnar and median nerves were very sensitive to the slightest pressure. But the most distressing symptoms of all was the occurrence of frequent fits of violent vomiting. The pulse was small and concentrated (80). On account of the vomiting, pressure was applied to the vagus of the left side. The effect was perfect quietude, with laborious breathing, for about ten minutes; pulse weak and very irregular.

After removing the pressure the patient remained perfectly quiet for upwards of ten minutes, during which the pulse was full and regular (70). There was apparently complete insensibility, but it is impossible to say how far this was really the case, as she was purposely left undisturbed. When she came to her senses the vomiting had ceased, leaving merely some slight nausea. The pain in the head and excitability had left. She

stated that she felt in a perfect state of bliss compared to her previous condition.

The cessation of the vomiting was permanent, and that of the pain in the head nearly so. The fulness of the pulse remained for some hours. On the following day it had diminished in volume, and was at the normal state.

This is an instance in which I have observed, after compressing the vagus, a permanent change in the state of the pulse, and I much regret not having a sphygmograph at hand to copy its exact condition. This subject I intend to examine thoroughly on a future occasion.

In this case, as in the preceding, vagal pressure immediately quieted the violent vomiting, which had previously been going on for some hours, and it is to be remarked that in both instances there had previously existed a state of gastritis.

The results obtained in cases of sea-sickness led me to hope that by this means we might combat obstinate sea-sickness, and I have some expectation that it might be efficacious in this affection, although I have not obtained as yet any decisive proof on the subject. On applying it on myself—I must premise the statement that I am a complete martyr to sea-sickness—the last time I passed from Ostend to London, at night, when in the berth, I found nausea already commencing; pressure on the vagus produced sleep on two occasions, and I was enabled to escape the enemy by this indirect influence of vagal pressure.

Dr. Parry has already remarked its influence in producing sleep in cases of restlessness, where there is mental excitement, and what is termed "the fidgets." It is particularly efficacious in cases where one pervading idea of an annoying nature occupies the mind, which cannot be dispelled, but is rather intensified by any attempt to dispel it. Under such conditions the influence of vagal compression is most heroic. Even if sleep is not procured, if once we induce a sense of faintness by vagal pressure, it seems to act as a sponge passed over writing on a slate, either removing this one ideal state, or bringing the intensified idea on a level with the others. I have repeatedly verified this effect on myself and other persons, by comparing the state of the mind before and after vagal compression.

In cases of mania, where the mind is trembling on the limits of unreason and reason, I have a strong conviction that the nervous shock caused by vagal pressure would, either alone or in combination with other agencies, be productive of the most happy results.

Case VIII.—C. B——, aged 25, had suffered from a severe attack of acute rheumatism, which had lasted for about two months, having successively invaded all the large joints, the hands and the feet. Several times during apparent convalescence the disease reappeared, making a fresh attack on all the joints before showing any signs of abatement. The heart and its membranes throughout the illness had remained intact, until one night the most violent disturbance of the heart's action occurred, accompanied with pain and extremely rapid and tumultuous pulse. She was in the most violent agitation and fear of immediate death, with fits of crying, but no other signs of hysteria then or during any of the time I had known her previously.

After applying a large mustard plaster to the præcordium without any benefit, I tried compression of one vagus at first, and afterwards of both at once. The sedative effect was most remarkable; in the course of a few minutes the agitation had subsided, the heart's action became quieter and more regular, and finally all the nervous symptoms subsided. A few minutes afterwards she sank into a steady sleep, and on awaking was perfectly quiet, and the cardiac symptoms never reappeared.

As a strong perturbating agent we may occasionally employ compression of the vagus with great advantage.

Case IX.—Miss S—— had been suffering from hemicrania, recurring periodically every day for several months. During the attacks, the temporal region, the face, and the eye were especially affected; there was most severe pain, with extreme susceptibility to the light, much redness of the conjunctiva, and flow of tears. During several months the young lady had been subjected to the action of the antiperiodic remedies, such as quinine, iron, &c., with occasional amendment, never of a durable nature. One or two suspicious teeth had been extracted without any advantage. Amongst the numerous local remedies, galvanism over the various ramifications of the trigeminus and other painful branches down the neck during the intermission afforded some relief.

The general health becoming much affected, as evidenced by the loss of flesh, impaired digestion, occasional faintness, and a constant air of suffering, it was determined to try the effect of a strong perturbating action on the system; in which I was the more encouraged, as in a case of intermittent fever of upwards of two years standing (in spite of all the means employed for the cure of the patient) an immediate and effectual cure had been procured by the patient's fall from his horse into a canal while riding across the country.

Miss S——, while seated in the presence of Dr. Berney, of Rolle, Canton de Vaud, had the two vagi strongly compressed. An immediate state of syncope, with resolution of all the voluntary muscles and apparent insensibility, ensued. Notwithstanding the alarm of some members of the family present, as the respiration and the heart's action were regular we did not allow her to be disturbed in the slightest degree, but remained watching during two hours; not the slightest voluntary movement was executed. At the end of this time the patient gradually regained consciousness and motor power, when she was conveyed to bed.

It is of course impossible to say how far the insensibility would have resisted the various irritants that might have been employed to test it, as the object of Dr. Berney and myself was to leave her completely undisturbed. As far as the patient was concerned, she was perfectly unconscious of what passed from the beginning to the end.

The result was that from that time to the present date —upwards of two years—she has not had the slightest return of a paroxysm, and has completely regained her flesh and colour.

A FURTHER CONTRIBUTION TO THE TREATMENT OF TRAUMATIC TETANUS.

BY EBEN WATSON, M.D.

Professor of Physiology in Anderson's University, and Senior Surgeon to the Royal Infirmary, Glasgow.

I HAVE just concluded the treatment of a case of traumatic tetanus, which teaches so many important lessons for our guidance in future that I desire shortly to relate its chief features—a not unfitting appendix to my former paper in the *Practitioner* for September, 1869.

The subject of the case was a strong young workman, 27 years of age, who trod on a rusty nail fixed in a plank, so that the nail ran up into his foot, inflicting a very painful wound. This happened on the 1st of December, 1869. He pulled out the nail, and by the direction of a surgeon applied a poultice, under which the wound rapidly healed; but on the 11th of the same month he began to feel stiffness in his jaw, neck, and shoulders, and this rigidity had extended to his whole body by the third day thereafter, viz. on the 14th December, when he was admitted, under my care, into the Royal Infirmary.

I need not give the daily reports which were carefully made by my house surgeon, Mr. Allan, in the journals of the infirmary. It will suffice for my purpose to state that, with the exception of an occasional purgative and appropriate diet, he took no other drug but the Calabar bean.

I must, however, call attention to the manner in which this drug was administered. It was not slavishly given in certain quantities and at certain times; but I had the patient watched day and night by my house surgeon, or some of the other assistants resident in the infirmary, and by non-resident dressers, who took the duty by turns. I could thus direct the treatment

intelligently from hour to hour according to the patient's state. We soon established the fact that it required two grains of the alcoholic extract of Calabar bean to produce any good effect in this case, and that dose was given in solution as a weak tincture; but the intervals of administration were very various. At the height of the disease, and during its many exacerbations, I frequently ordered the above dose to be repeated every quarter of an hour for three or four times till relaxation was produced, which it never failed to be; and then the usual intervals of half an hour or a whole hour were resumed.

Again sometimes his stomach rejected the drug, it being squirted up violently rather than vomited. On these occasions I directed that double the quantity should be given by injection into the rectum, and for this purpose a solution of the extract in starch water was employed with success. I may mention here, that in this and other cases I have employed the method of subcutaneous injections, but in my hands they have not produced any very decided or reliable effect.

But the important *new fact* which this case establishes is the freedom with which the drug may be used in such cases, and of this I shall give some idea by the following epitome.

The whole duration of the disease, from its commencement to its cure, was forty-six days, and of these he was under treatment by the Calabar bean for forty-three. During these days he took the following enormous quantities of the extract.

During the first three days and nights he took twenty-three grains of the extract, in rapidly increasing quantities; thus he took two grains during the first twenty-four hours, eight grains during the second, and thirteen during the third such period. These doses merely sufficed to keep the disease in check. They never produced decided relaxation.

I then employed a very pretty tincture made by percolation and obtained in Edinburgh, but it did not seem strong enough for our case in the doses ventured upon (℥ x to xx); I therefore gave it up in a few hours, because no one can be certain of its exact strength, and I returned to the tincture of the extract mentioned above.

For the next seven periods of twenty-four hours, he took in each period sixteen grains of the extract; then the quantity was

increased to forty-eight grains in twenty-four hours; and in the next twenty-four hours to fifty-seven grains. Next day and night he was easier, and took only forty-two grains; but next he was again worse, and took the very large quantity of seventy-two grains. He did not lose any part of these doses, but took them all by the mouth and retained them. They were all needed to keep him only moderately relaxed, and it is noteworthy that no disagreeable effect was produced by the bean, but its action in relaxing the rigid muscles was quite obvious.

Next day and night the quantity used was forty-eight grains, then forty-four, then thirty, then twenty-four; but, apparently owing to a strange obstreperousness in his behaviour, as for instance his insisting upon coming out of bed and lying on the floor, he became worse, and required the bean to the amount of fifty-four grains during the next twenty-four hours. This, however, had a disturbing effect on his heart, which became tumultuous in its action. He was likewise very sick, and pained in his bowels; hence for a few days the bean was given by injection into the rectum, as was formerly mentioned. However, he gradually improved, so that the quantity of the bean given was soon diminished to thirty grains, then to twelve, then to six, once more rising to twelve grains for one day, and again falling to four, and finally the drug was stopped altogether on the 26th of January, and I am glad to add that the man is now perfectly well, and fast recovering the strength he had lost in his fearful struggle for life.

A curious circumstance remains to be told, not connected with the Calabar bean, viz. that after the man's recovery a small suppuration took place in the foot at the seat of the original injury, and when this was opened, a small bit of leather was extracted. This was evidently a part of the sole of the boot, which had been carried into the foot on the point of the nail, and remained there until it excited suppuration and was expelled. I have wondered if the presence of this irritating substance was the cause of the protracted nature of this case, and if it would have been more easily and more speedily cured had it been extracted sooner. No doubt the practice of formal incisions with the view of dividing the nerves of the wounded part have failed to arrest tetanus once it has been established; but as many such cases

present themselves with the wound thoroughly cicatrized, it may be questioned whether it might not be good practice to cut through the cicatrix so as to explore it and make sure that no foreign matter was embedded beneath it. The very incision might relieve irritation, and at all events could do no harm. I would recommend that this should be borne in mind by surgeons, as a practice authorized by the present case, wherever there is the slightest possibility of foreign matter being enclosed within the cicatrix of a wound causing tetanus.

But to return for a moment, in conclusion, to the main object of this paper: I beg to press on the attention of my professional brethren the safety of a very full and free administration of the Calabar bean in traumatic tetanus, if only two conditions be fulfilled: viz. 1st, That the patient be well and intelligently watched, so that the drug be given really as often and as much as the patient requires at the time; 2d, That his strength be well supported by fluid nourishment and stimulants. Now, the relaxation produced by the bean enables the patient to swallow fluid food, and therein consists its superiority to all other relevants, such as chloroform and chloral for instance, which prevent the taking of food. I am encouraged to hope that, given as I have directed, the Calabar bean may yet be found as certain in the cure of tetanus as strychnine is in its production.

I may add that, in the treatment of this case, not less than 1026 grains of the alcoholic extract of Calabar bean were, one way or another, introduced into the patient's system; and if each grain of the extract is equivalent to sixteen of the powdered bean, the quantity given would represent fully thirty-four ounces of the latter. As the beans, on an average, weigh about sixty grains each, it would take 272 beans to yield the requisite quantity of the powder, but I suppose that more than these would be actually consumed in the preparation, as the rind would have to be excluded.

OBSERVATIONS ON THE PHYSIOLOGICAL ACTION OF VERATRUM VIRIDE.

BY CHARLES SQUAREY, M.B. LOND.

THE following observations on the physiological action of this drug were made with the view of confirming the results obtained by Oulmont.

From observations and experiments made on man, dogs, rabbits, and frogs, Oulmont found that this drug affected chiefly the digestive, respiratory, and circulatory system, causing, very shortly after it was administered, nausea, vomiting, diarrhœa, and rapid diminution in the number of respirations, and in the pulsations of the heart. In those cases in which poisonous doses were administered the vomiting and diarrhœa were excessive, but no inflammatory lesions were discoverable at the post-mortem examinations.

The most remarkable effect of the drug, though, was its power of reducing the temperature of the body, which in some of the cases was noted to fall, in from an hour and a half to two hours after administration, two, three, or five degrees, and to remain so reduced for twenty hours or so. It was to test this latter point especially that the following observations were made. They differ from those of Oulmont in this respect. He used a resinous extract obtained from the veratrum viride, whilst in the following the tincture was employed. No experiments were made on animals. Patients were chosen in the hospital in a state as nearly approaching to health as possible, and to them the drug was administered in increasing doses till a marked effect was obtained. I must here beg to thank Drs. Reynolds and Wilson Fox, by whose kindness I was enabled to carry out these observations.

In each case the patient was put on a stated diet, and kept in bed for a day or two previous to the administration of the drug

and their temperature and pulse noted as often as possible throughout the day, in order that a knowledge of their normal temperature and pulse might be obtained with which to compare those observations taken after the exhibition of the drug.

The following is a short account of each case:—

Case I.—C. Y——, aged 45, widow. Admitted into University College Hospital suffering from symptoms of false angina pectoris, the pain and spasm coming on once and sometimes twice in the course of the day; says that she has been so suffering for the last nine months. On examining the heart the impulse was felt beating in the normal position, the area of dulness not increased. The sounds weak, short, the second somewhat accentuated at the base. At the second L. cartilage a distinct systolic murmur was audible. The contraction of the heart very irregular.

Her general condition was fairly good. Body fairly nourished; the tongue moist and slightly furred; the appetite not very good; the bowels generally acted two or three times daily.

After being in the hospital for about a week, during which no change in her condition took place, the following observations were made (see next page), the temperature and pulse being taken for three consecutive days before any veratrum viride was administered.

On comparing these tables it is seen that the pulse was very soon affected by the doses given, but that no fall of temperature worthy of note took place. On the 28th of November, after a second dose of 20 minims of the tincture had been given, the pulse fell within two hours from 10 to 20 beats in the minute, and continued so for about two hours; and on again rising to about 60 beats to the minute at 7.30 P.M., was by another dose of 20 minims reduced within an hour again to 50, the temperature all the time remaining the same.

On the 30th the medicine being given in the same way, corresponding results were again observed.

On the 1st of December one dose of 40 minims was given. This reduced the pulse in an hour about ten beats, and for the whole day till 4 P.M. the pulse remained about 20 beats below the average of those days when no medicine was given. The temperature not altered at all.

Case I.

Date.	Time.	No. of Observations.	Range of Temperature.	Range of Pulse.	Remarks.
Nov. 25.	9 a.m. to 12 a.m.	14	98·4 to 99·2	62 to 72	No medicine given.
	2 p.m. „ 4 p.m.	13	98·6 „ 99·4	90 „ 98	
Nov. 26.	9 a.m. „ 12 a.m.	18	98 „ 98·4	60 „ 72	No medicine given.
	2 p.m. „ 4 p.m.	12	98·4 „ 99	64 „ 80	
	6 „ „ 9 „	11	98·4 „ 98·8	66 „ 78	
Nov. 27.	10 a.m. „ 12 a.m.	13	98·4 „ 98·6	62 „ 70	No medicine given.
	2 p.m. „ 4 p.m.	14	98·4 „ 98·6	66 „ 78	
	6.30 p.m. „ 9 „	12	98·6 „ 98·8	64 „ 76	
Nov. 28.	9 a.m. „ 12 a.m.	19	97·4 „ 98·2	60 „ 74	20 minims tinct. veratrum viride given at 10 a.m., 2 p.m. and 7.30 p.m.
	1 p.m. „ 2 p.m.	3	98·2	72	
	2 „ „ 3 „	6	98·2 „ 98·8	60 „ 64	Medicine at 2 p.m.
	3 „ „ 4 „	3	98·8	64 „ 54	
	4 „ „ 5 „	7	98·8 „ 99	50 „ 56	
	6.30 „ „ 7.30 „	4	98	56 „ 60	
	7.30 „ „ 8.30 „	4	98	58 „ 54	Medicine at 7.30 p.m.
	8.30 „ „ 9.30 „	4	98	54 „ 50	
	9.30 „ „ 10 „	2	98	50 „ 54	
Nov. 29.	9.45 a.m. „ 10 a.m.	2	97·4	64 „ 60	20 minims tinct. veratrum viride given at 9.30 a.m.
	10 „ „ 11 „	7	97·4 „ 97·8	58 „ 56	
	11 „ „ 12 „	7	97·8	56 „ 50	
Nov. 30.	9 „ „ 10 „	4	98 „ 98·4	68 „ 70	20 minims tinct. veratrum viride given at 9.30 a.m., 2 p.m. and 7 p.m.
	10 „ „ 11 „	6	98·4 „ 98·6	58 „ 68	
	11 „ „ 12 „	6	98·4	72 „ 70	
	2 p.m.	....	....	....	Medicine given.
	3.30 p.m. „ 4 p.m.	4	98·2 „ 98·4	52 „ 50	
	4 „ „ 5 „	6	98·4	48 „ 56	
	6.30 „ „ 7 „	3	98·4	68 „ 70	
	7 „	....	....	....	Medicine given.
	7 „ „ 8 „	6	98·4	70 „ 58	
	8 „ „ 9 „	4	98·4	58 „ 48	Faint, retching.
	9 „ „ 10 „	7	98·4	52 „ 44	Faint, sick.
	10 „ „ 11 „	5	98·4	50 „ 52	Feels better.
Dec. 1.	9.30 a.m. „ 10 a.m.	4	98·4 „ 98·6	60 „ 64	40 minims tinct. veratrum viride given at 10 a.m.
	10 „ „ 11 „	6	98·6 „ 98·8	64 „ 62	
	11 „ „ 12 „	7	98·8 „ 98·6	60 „ 52	Faint and sick.
	1.50 p.m. „ 3 p.m.	7	98·4 „ 98 8	58 „ 54	
	3 „ „ 4 „	7	98·8 „ 98·6	54 „ 58	
	8 „ „ 9 „	4	98·4	66 „ 76	
	9 „ „ 10 „	5	98·4	68 „ 72	
Dec. 2.	9 a.m. „ 10 a.m.	5	98 „ 98·6	64 „ 72	60 minims tinct. veratrum viride given at 10 a.m.
	10 „ „ 11 „	8	98·4 „ 98·6	72 „ 60	
	11 „ „ 12 „	8	98·4 „ 98·8	60 „ 42	
	12 „ „ 1 p.m.	7	98·6 „ 99·2	42 „ 54	
	1 p.m. „ 2 „	6	99 2	46 „ 54	
	2 „ „ 3 „	6	99·2	60 „ 66	
	3 „ „ 4 „	4	99	64 „ 70	
	8 „ „ 10 „	8	98·6	68 „ 76	
Dec. 3.	9 a.m. „ 12 a.m.	17	98 „ 98·8	66 „ 72	No medicine given.
	2 p.m. „ 4 p.m.	13	98·6 „ 99·2	66 „ 76	
	8 „ „ 10 „	9	98 „ 99	66 „ 80	

On December 2, 60 minims of the tincture were given at 10 A.M. From 9 A.M. till 10 A.M. the pulse ranged between 64 and 72. One hour after the medicine had been taken the pulse began to fall, being between 11 and 12 A.M. as low as 42 beats

in the minute, and it continued ranging between 42 and 54 till 2 P.M., and then gradually rose again to the normal rate at 4 P.M., it being about 70.

The temperature this day was slightly higher than on the previous days.

CASE II.—E. G——, aged 18 years, nursemaid. Admitted into University College Hospital, suffering from anæmia and amenorrhœa. On admission patient suffered much from shortness of breath and palpitation of the heart.

After being in the hospital some little time, and her general condition being much improved, the following observations were made:—

Date.	Time.	No. of Observations.	Range of Temperature.	Range of Pulse.	Remarks.
Nov. 28.	9 a.m. to 12 a.m.	19	98·8 to 99·2	92 to 100	No medicine given.
	1.30 p.m. „ 4.30 p.m.	13	98·4 „ 98·8	88 „ 96	
	8 „ „ 10 „	9	99	92 „ 100	
Nov. 29.	9 a.m. „ 12 a.m.	15	98·6 „ 99	88 „ 100	No medicine given.
Nov. 30.	9 „ „ 9.30 „	4	98·8 „ 99	90 „ 100	15 minims tinct veratrum viride given at 9.30 a.m.
	9.30 „ „ 11 „	8	99 „ 99·2	98 „ 84	
	11 „ „ 12 „	7	99 „ 99·2	88 „ 72	
	3 p.m. „ 4 p.m.	6	99	80 „ 86	
	4 „ „ 5 „	6	99 „ 99·2	76 „ 86	
	6.30 „ „ 7.30 „	6	99·2	86 „ 92	
	7.30 „ „ 10 „	10	99·2	82 „ 88	
Dec. 1.	9 a.m. „ 9.30 a.m.	4	98·8 „ 99	88 „ 92	30 minims tinct. veratrum viride given at 9.30 a.m.
	9.30 „ „ 10.30 „	8	99·2	92 „ 80	
	10.30 „ „ 11.30 „	6	99·2 „ 98·8	80 „ 56	Feeling sick and faint.
	11.30 „ „ 12 „	3	98·8	56 „ 60	Feeling sick and faint.
	2 p.m. „ 3 p.m.	7	98·2 „ 98·6	58 „ 66	Feeling better; sickness stopped.
	3 „ „ 4 „	7	98·4	66 „ 78	
	8 „ „ 10 „	9	99	80 „ 90	
Dec. 2.	9 a.m. „ 10 a.m.	6	98·4 „ 98·8	88 „ 94	45 minims tinct. veratrum given at 10 a.m.
	10 „ „ 11 „	6	98·4 „ 98·8	88 „ 70	Slight headache.
	11 „ „ 12 „	6	98·8 „ 99·2	58 „ 72	Feeling sick.
	12 „ „ 1 p.m.	6	98·8 „ 99	52 „ 72	Vomiting and retching.
	1 p.m. „ 2 „	6	99·2	54 „ 56	Appetite gone.
	2 „ „ 3 „	6	99·2	58 „ 70	Not sick, head better.
	3 „ „ 4 „	5	99·2 „ 99·4	60 „ 68	Feeling better.
	8 „ „ 10 „	8	98·2 „ 98·6	64 „ 74	Feeling very well.
Dec. 3.	9 a.m. „ 12 a.m.	17	98·8 „ 99·4	82 „ 92	No medicine given—feels well.
	2 p.m. „ 4 p.m.	15	99 „ 99·4	88 „ 96	Feels well.
	8 „ „ 10 „	9	99 „ 99·4	88 „ 94	Feels well.

Three doses of the tincture were given—

On November 30th, 15 minims at 9.30 A.M.
„ December 1st, 30 „ „ 9.20 A.M.
„ December 2d, 45 „ „ 10 A.M.

The dose of fifteen minims on the 30th did not have much effect on the pulse, but the 30 minims given on the 1st, and the forty-five minims given on the 2d, reduced most distinctly the pulse, the medicine taking effect about an hour and a half after it had been administered.

CASE III.—S. W——, aged 48 years. Admitted, complaining of heating sensation in the abdomen, which at times gave rise to much uneasiness and to occasional vomiting. The pulsations of the abdominal aorta most distinctly felt in the epigastric region. No enlargement of the vessel. Heart healthy. Appetite fairly good. Bowels open daily.

In this case two doses of twenty and forty minims of the tincture were given on the 6th and 7th of December—the smaller dose producing a slight, and the larger one a most marked diminution in the number of the beats of the pulse, within two hours of taking the medicine. In this case, as in the others, the temperature is not in the least altered.

Date.	Time.	No. of Observations.	Range of Temperature.	Range of Pulse.	Remarks.
Dec. 4.	11 a.m. to 12 a.m.	6	98·6	68 to 72	No medicine given.
	2 p.m. „ 4 p.m.	13	98·2 to 98·8	72 „ 78	
	8 „ „ 10 „	6	98·2 „ 98·6	68 „ 74	
Dec. 5.	9 a.m. „ 12 a.m.	15	98·2 „ 98·4	66 „ 74	No medicine given.
	10 p.m.	1	98·4	72	
Dec. 6.	9 a.m. „ 10 a.m.	7	98·4 „ 98·6	64 „ 68	20 minims tinct. veratrum
	10 „ „ 12 „	12	98·6 „ 98·8	64 „ 68	viride given at 10 a.m.
	2 p.m. „ 3 p.m.	6	98·6 „ 98·8	60 „ 56	Feeling weak and faint.
	3 „ „ 4 „	6	98·8	56 „ 62	Feeling better.
Dec. 7.	9 a.m. „ 10 a.m.	6	98	60 „ 66	40 minims tinct. veratrum
	10 „ „ 12 „	13	98 „ 98·4	60 „ 70	viride given at 10 a.m.
	12 „ „ 2 p.m.	....	....	....	Feeling very sick and faint. Cannot take any dinner.
	2 p.m. „ 3 „	6	98 „ 98·4	48 „ 52	Sick and faint.
	3 „ „ 4 „	8	98·4	50 „ 56	Feeling better—sleepy.
	4 „ „ 5 „	7	98·4	54 „ 64	Slight headache.
	8 „ „ 10 „	12	98	58 „ 64	Feeling comfortable.
Dec. 8.	9 a.m. „ 12 a.m.	15	98 „ 98·8	58 „ 64	No medicine given.

CASE IV.—G. B——, aged 18 years. Admitted into University College Hospital, having a temperature of 104° F. Pulse intermittent and irregular. The day after admission his temperature was normal; the pulse as before, and he expressed himself as feeling very well. No uneasy sensation about heart.

He has always been strong and healthy, and as long-winded as any of his mates.

From this patient's anxiety to leave the hospital, only one observation was made. On the 21st his temperature and pulse were taken frequently, no medicine having been given, and on the 22d thirty minims of the tincture of veratrum viride were given with exactly the same results as in the previous cases, as will be seen by reference to the following table :—

Date.	Time.	No. of Observations.	Range of Temperature.	Range of Pulse.	Remarks.
Dec. 21.	9.30 a.m. to 12 a.m.	12	98 to 98·6	58 to 66	No medicine given.
	1.30 p.m. „ 3.30 p.m.	12	97·6 „ 98	56 „ 62	
	9 „ „ 10 „	6	98	56 „ 60	
Dec. 22.	9 a.m. „ 10 a.m.	6	97·8	58 „ 64	30 minims tinct. veratrum viride given at 10 a.m.
	10 „ „ 12 „	13	97·8	58 „ 64	
	1.30 p.m. „ 2 p.m.	3	97·8	46 „ 48	
	2 „ „ 4 „	6	98	46 „ 50	
	9 „ „ 10 „	4	98	56 „ 60	

These observations do not confirm Oulmont's statement with regard to the power of the drug to restore the temperature of the body. In every case it is seen that no alteration of note has taken place in the temperature, although in each case sufficiently large doses were given to reduce the pulse most remarkably.

They agree, however, with Oulmont's in every other respect. Nausea and vomiting were produced in every case where more than twenty minims were given at one dose, and in one case there was a little diarrhœa. The respirations were also reduced in number, corresponding with the pulse, and in all cases there was a sensation of great weakness and general loss of power when fully under the influence of the drug.

Veratrum viride seems to act especially on the heart, to be a very powerful cardiac poison, analogous to digitalis, but much more rapid in its action.

BELLADONNA AS AN APERIENT IN CONSTIPATION.

BY F. B. NUNNELEY, M.D.

ALTHOUGH constipation is such a common complaint and a source of so much annoyance, it is scarcely regarded by persons generally as a disease requiring medical aid; yet numerous popular remedies are resorted to for its relief, comprising all known purgatives, often in considerable doses. From time to time these are repeated, in many cases acting as only temporary palliatives, until at last some aperient preparation has to be taken from one to three times a week to ensure as many as two or three evacuations in this time.

It is not intended to enter into the wide subject of the causes and treatment of constipation, but only to offer a few remarks on its *medicinal* treatment by means of belladonna, from observations made, for the most part, on patients of the York Dispensary, where I gave it to nearly all those who suffered from constipation, simply to restore the natural action of the bowels, and not to cause a flow of secretion from the intestinal mucous membrane. The method followed was, in the main, that recommended by Trousseau. Extract of belladonna was given in doses of gr. $\frac{1}{6}$ to gr. $\frac{2}{3}$ on rising every morning. A grain of the extract and gr. iij. of the extract. gentianæ were divided into six pills, and one to four prescribed for a dose.

On analysing the cases of constipation, both recent and of long standing, it was found that the greater number were associated with dyspepsia, and especially with that form presenting more or less the character or gastric irritation, in which the tongue was thinly furred, with prominent red papillæ at the tip, and in which there was tenderness at the epigastrium, pain, especially after food, and often more or less headache. Patients with these symptoms presented themselves with a history of inactive bowels for several months or years, often stating that

they were obliged to take aperient pills, senna, castor-oil, &c., once or twice a week to produce an evacuation. The ages of those patients varied from twenty to sixty years of age, the majority lying between twenty-six and fifty. To these belladonna was given for from one to three weeks. It nearly always caused an evacuation, usually of solid stools, after breakfast on the morning on which it had been taken. Generally the bowels continued regular after the belladonna was discontinued, and sometimes headache was greatly mitigated. In one case, the patient, a woman, aged forty-seven, had had constipated bowels for twenty-six years, for which she had taken pills or castor-oil once a week. Belladonna restored the natural daily action in fourteen days. In a few cases no permanent cure was effected, but relief could be obtained by taking belladonna every second or third day, the dose had not to be augmented, and no increased constipation followed its use.

In more recent cases the natural action of the bowels was restored in a few days: thus a man had taken pills every other day for five weeks, but the bowels acted naturally after taking belladonna for six days.

Treatment was specially directed to the dyspepsia in all cases, but no aperient except belladonna was given, and frequently not this, until the effect of regular diet and habits, and of general treatment, had been observed.

The remaining cases of constipation occurred in very various diseases. Most often belladonna acted as an ordinary aperient when given in the manner before stated, and its use had not to be continued more than from one to three weeks to cure the constipation. Rarely, it produced no effect even in doses of gr. $\frac{1}{2}$ to gr. j, except causing dryness of the throat: such a failure occurred in the third stage of phthisis.

Belladonna in the usual dose of gr. $\frac{1}{8}$ to gr. $\frac{1}{2}$ produced no dryness of the throat, or dilatation of the pupil, but presented the following advantages over ordinary purgatives:—It did not gripe but gave usually a healthy solid stool, increased constipation did not follow its use, and it very often restored the natural action of the bowels, so as to render a recurrence to this or other aperient unnecessary. Another and important advantage is the small bulk in which the remedy can be given.

ON THE DIETETIC AND MEDICINAL USES OF WINES.

BY THE EDITOR AND STAFF.

PART I. ON THE PLACE OF WINES IN THE DIET OF ORDINARY LIFE.

In commencing a series of papers on the uses of Wines in health and in disease, we must briefly define the intended scope of our inquiry, in order to avoid misunderstandings. In the first place, it is no part of our object to discuss the question of the lawfulness or the advisability of using alcoholic liquors in general, either as food or as medicine; we shall take it as established, both by wide-spread custom and by the most recent physiological research, that alcohol, as such, has its legitimate place in the sustentation both of the healthy and of the diseased organism. Nor shall we occupy space with the re-assertion of the doctrine, already repeatedly laid down in the pages of this journal, of the absolutely different effects respectively produced by the moderate and by the excessive use of this class of drinks. It is our intention to deal specially with Wines as such; to show that the whole group of these beverages has common properties and uses that separate it from other alcoholic liquids, and further, that among wines themselves there are very numerous differences, of which many are probably not yet understood either by the public or even by the majority of medical men. We can hardly be mistaken in the latter assertion, sweeping though it seems; since not only is it common to meet with invalids and others who have received diametrically opposite directions as to the choice of beverages from different practitioners of equal standing, but we have observed after a pretty close study of this subject, extending over more than thirteen years, that hasty generalizations, which will not bear sifting, are almost as common in the pages of recent as of older writers on this topic. One part of our knowledge has, indeed, of late made solid, though limited advan-

ces—viz., the chemistry of wines. But the far wider question of their choice and practical uses is still in the most uncertain state; and it must be confessed that recent literature on the subject, though it may have cleared away some gross misconceptions, has almost neutralized this benefit by fostering the growth of new prejudices which are scarcely less unfounded than the old ones. And there is one aspect of the new discussions upon which, though we would willingly ignore it, our duty compels us to animadvert with plainness; we mean the influence of commercial motives. We are not imputing conscious dishonesty to the writers even of the most objectionable of the many trade circulars which have been published under the guise of scientific pamphlets on wine; but it is only too obvious to those who are at all behind the scenes that commercial bias has in several instances assisted powerfully in the development of exclusive dogmas which, from a scientific standpoint, must be regarded as capricious and absurd. It may perhaps be necessary, hereafter, to illustrate this with some particularity; at present it will be enough to adduce an instance which is so common that our criticism of it can scarcely inflict the sting of personal reproach; we refer to the clamour for the exclusive use of particular "natural" or "unfortified" wines. Doubtless this cry represents a natural, and on the whole a wise, reaction from certain stupid and pernicious routine habits of English life; but it has been largely fostered and exaggerated by traders and by a certain class of scientific men, in a manner which scarcely corresponds with the idea of disinterestedness, unless we are to suppose that their enthusiasm is strongly leavened with ignorance.

To a medical writer on wines there are several inducements to attack the subject first from the side of the medicinal uses of these drinks: the strongest reason being that, from the nature of his daily experience, he is most familiar with this aspect of the question. We prefer, however, to start from the view of wine as a beverage of ordinary life; being persuaded that the subject can only be fairly examined in this way. It is no doubt true, on the one hand, that a complete statement of the physiological action of wines cannot, in the present state of science, be given; and, on the other hand, it may be urged that if empirical experience is to be our guide, the circumstances of sickness offer a guarantee for closer and more accurate obser-

vation of the phenomena than can be expected when wines are used as a mere beverage of the healthy. To this argument we believe there is one conclusive reply—that there is no such clear line between health and disease as is assumed in common speech; that the foreshadowings and faint images of disease are to be seen in sundry incidents of the life of those who are conventionally regarded as healthy; and that it is in the study of these "natural diseases" (if we may use such a phrase), and their relations to the dietary remedies which general custom, independently of medical authority, has prescribed for them, that we are most likely to discover a reasonable basis for the use of these remedies in diseases which involve extensive and obvious departure from the standard of health. It need scarcely be said that alcoholic drinks, rightly or wrongly, are the commonest of all household remedies for a large number of paltry ailments; and one of the first things which we wish to demonstrate is the prominent fitness of wines, above other alcoholic drinks, for all legitimate purposes of this kind. Accordingly, we shall in the first place very simply sum up the composition of wines, as a class; and also the main distinctions between the principal kinds.

1. In the first place, we have to consider wines as alcoholic fluids; and we must remind our readers of the elementary facts as to their relative strengths as compared with each other, and with other kinds of alcoholic drinks. It will be enough for the present to say that the *strong* wines, including port, sherry, Madeira, Marsala, and all that genus, contain on the average something like 17 per cent. of absolute alcohol (the strongest ports ranging as high as 23 per cent or more), and that the *light* wines, including claret, burgundy, champagne, Rhine and Moselle wines, Hungarian wines, &c., average between 10 and 11 per cent of absolute alcohol (the lightest champagnes not containing more than 5 or 6 per cent.). Comparing wines with beers, we may note that the poorest sorts of beer contain about 2 per cent of absolute alcohol; ordinary table ale, as drunk in most middle class households, about 3 per cent.; ordinary porter between 3 and 4 per cent.; stout from 5 to 6 per cent.; while the strongest kinds of malt liquors range through various degrees up to even 10 per cent.; and a common strength for good bottled ale or stout is about 7 per cent of absolute alcohol.

On the other hand, good brandies and rum average between 45 and 50 per cent. The above rough averages are only drawn with a view to place before the reader a standard of comparison by the help of which he may realize somewhat more accurately than is usually done, even by medical men, the comparative alcoholic potency of beverages which are so commonly recommended in an offhand and careless fashion. For instance, let us take the very common case of a lady, not exactly ill, but delicate, and "needing generous living," who takes "three or four glasses of port wine a day." Now, it need hardly be said that wine glasses vary greatly in size, and that of late years there has been a marked tendency to make them larger than formerly; but we will take the moderate average of two ounces for a port glass: then four of these will contain 8 ounces of wine, which, on the supposition that the liquor is of a fair age and quality, will represent 1½ ounces of absolute alcohol, or the alcoholic equivalent of 50 ounces (five large tumblers) of table-beer, or 3 ounces of good brandy, or two-thirds of a bottle of a generous claret or Rhine wine. Or to put the comparison in another practical form (still avoiding the nuisance of a dry tabular statement) we may say that a bottle of twelve glasses of average port is equal, in alcoholic strength, to rather less than half a bottle of brandy, or two bottles of good claret or hock, or nearly a gallon of table-beer or of light champagne. Now, it would be easy to make a somewhat sensational point, by showing that the by no means unusual allowance for ladies who are at all "delicate" of two glasses of port or sherry at lunch, and the same quantity at dinner daily, makes up the alcoholic equivalent of a bottle of brandy every week, which looks rather shocking on paper. But apart from the question whether such an allowance is excessive or not, we would insist on the value of this kind of comparison, as tending to show very distinctly that the place of the stronger wines is rather among the cordials, to be used under express and careful medical sanction, than among the beverages of common life, since it is plain that a very little carelessness in their use may lead to actual excess. The daily allowance above mentioned includes an amount of absolute alcohol which our own experimental researches have shown to be about the limit of what can be habitually taken by persons leading a not very active life,

without provoking symptoms of chronic malaise indicative of actual alcoholic poisoning.

It is otherwise with the class of light wines, speaking in the broadest sense; wines, namely, that average no more than ten per cent. of alcoholic strength. So far as alcoholic strength is concerned it may be said in general terms, that half a bottle a day of such wine for a sedentary, and a bottle a day for a vigorous and actively employed adult, affords a reasonable and prudent allowance of alcohol; and this quantity of wine, either alone or with water, will be enough to satisfy the needs of moderate persons for a beverage at lunch and dinner, the only two meals at which alcohol should, as a rule, be taken.

We have put this question of the absolute alcoholic allowance for healthy adults in a somewhat crude and abstract form, not undesignedly; for we wish to compel the upper and middle classes, and their medical advisers, to look the facts of alcoholic consumption honestly in the face. No one who is at all conversant with the habits of the wine-drinking classes will deny that such a daily allowance of alcohol as we have above mentioned is distinctly within the average consumption of persons of moderate habits as the ways of society go; and indeed we fear that a good many persons will characterise it as utopian in its standard of temperance. It is therefore well to remember, that the same quantity of alcohol, represented in beer, makes up between two and three pints; and that a labouring man who exceeded this daily allowance would certainly fall under the ban of conventional moralists as "intemperate." It would probably be a surprise to many worthy philanthropists, if they chanced to read this paper, to find themselves placed so nearly on a level with Hodge the carter, who reprehensibly fuddles himself with "t'other pint." But in fact the matter is stronger than this: and for once we must beg leave to drop the conventional theory of educated manners, and describe plain facts. It is true that there has been a real advance towards temperance of late years, and that intoxication has become a monstrous exception among the cultivated classes. But we may appeal to any medical man with a knowledge either of metropolitan or of provincial society as to the accuracy of the following computation. We shall admit, in the first place, that there are many men, and very many women, who drink almost

no alcohol. But the greater number of men, and a large number of women, of the middle and upper ranks habitually take a daily allowance of alcohol far larger than that above indicated. We purposely leave out of sight the reckless "fast" men who are perpetually "nipping" at bitters or absinthe, or "setting themselves right" with just another "brandy and soda," and also the miserable women—whose numbers none but the doctors even faintly suspect—who indulge in secret dram-drinking. Excluding all such persons from our reckoning, let us merely consider the case of the moderate diners-out, and the virtuous dancing young ladies. The former will certainly take on the average eight ounces of strong wines, and twelve to sixteen of light wines, daily; or he will make up the equivalent of this with beer or with spirits: in fact, he will take about three ounces of absolute alcohol, or the equivalent of about a gallon of the puddle-beer that labourers drink. And the young lady will not take less than three-fourths of this quantity, by the time she has finished her last champagne-cup at the ball or rout. If any one thinks this estimate excessive, we assure him that, were it discreet, we could produce accurate notes of the performances of sundry terpsichorean and otherwise athletic young ladies, of irreproachable character, to which the foregoing facts are a trifle.

It is, in fact, a considerable puzzle to understand, at first, how our respectable classes manage to consume so much more alcohol, without reproach, than the unfortunate Wiltshire clodhopper, for example, can do. No doubt one reason is that their drinks are not muddled with Cocculus indicus, &c., as his is. But no doubt the truth is that the intoxicative, that is the *visibly* poisonous, effects of alcohol are mainly kept at bay by powerful exertion either of the muscular or of the nervous system: and the wealthy classes to a large extent do task either one or both of these systems far more heavily than labourers, except those employed in some specially fatiguing callings. Nevertheless there is grave danger of excess, were it merely from the multiplication of alcoholic drinks which are taken by the richer classes: and it will be our aim, in the next paper, to show that adherence to one drink, and generally one *wine*, is almost a necessity for the purposes of health.

(*To be continued.*)

Reviews.

The Present State of Therapeutics. With some Suggestions for placing it on a more Scientific Basis. By James Rogers, M.D., formerly Physician to the British Legation and to the Abouchoff Hospital at St. Petersburg. London: Churchill. Edinburgh: Maclachlan. 1870.

It is long since we read any treatise on practical medicine which afforded us so much pleasure and instruction as we have gained from the remarkable book before us. At a time like the present, which every thoughtful physician must feel to be one of transition, and to a certain extent of hesitation and pause, before large impending changes in our systems of therapeutics, Dr. Rogers steps forward with an argument which was not merely wanted, but indispensable, before sound progress could be made. Its main drift is the demonstration that up to the present time we have really no principles of therapeutics at all, although we doubtless possess much valuable empiric knowledge. This opinion is doubtless no novelty, but the way in which Dr. Rogers proves his case is thoroughly original. He ventures to look the facts of homœopathy fairly in the face; and with a candour which is as creditable to him as the ordinary diatribes of orthodox practitioners against homœopathists are disgraceful to them, he examines and analyses the reported results of homœopathic treatment. The issue of this inquiry is very remarkable, but it is not at all surprising to us, indeed it is what we have long suspected, though it was difficult to obtain the materials for proof. Shortly stated it is this: that the results of homœopathic treatment, as tested by mortality in acute diseases, are almost exactly the same as, certainly they are no better than, that of the purely Expectant method so long carried out in Germany; but that, on the other hand, they are very greatly superior to the results obtained under the systems of heroic treatment which where everywhere in vogue till quite recently; and also, there are decidedly inferior to the results obtained by the modern "restorative treatment," which is Expectancy (or nearly that), as regards abstention from *drugs*, *plus* a liberal and continuous supply of easily digested food, and if necessary wine. The author has enjoyed unusual opportunities for collecting the

materials for this judgment. For very many years he resided at St. Petersburg, where he was engaged in extensive hospital and private practice, and from an early period in his career he became acquainted with the practice of some of the most famous homœopathic physicians, and also with that of the Expectant school, in various parts of Europe. He has used the facts observed in his very uncommon experience in a singularly calm and judicial temper; and we can only say that a medical man who should find himself unable to derive instruction from Dr. Rogers' treatise must be incapable of scientific reasoning.

Not less remarkable than the author's candour and skill in dealing with the vital statistics of the different systems of treatment, is the searching character of his analysis of the fundamental principles of homœopathy—the doctrine of similars, and the dynamization of remedies by dilution and succussion. With temperate but pitiless logic he demonstrates the superficial and misleading character of the supposed resemblances between diseases and the physiological effects of the drugs which, according to homœopathy, can cure them. He examines afresh the standard instances on which the doctrine of cure by similars has mainly relied: viz. the asserted power of cinchona to produce the essential phenomena of intermittent fever, the asserted similarity between the symptoms of mercurial poisoning and those of syphilis, and the asserted power of sulphur to produce symptoms of itch. In regard to the first and last of these medicines he brings into deserved prominence the very accurate and valuable experiments of Jorg, which up to the present time were really the only "provings" that merited serious consideration. He exposes the completely insufficient character of Hahnemann's original observations on the subject. He adds the detailed account of fresh experiments which were made by himself and a carefully selected corps of assistants, the result of which is the establishment of an absolute negative to the asserted power of cinchona or quinine to produce any characteristic symptom of intermittent fever, or of sulphur to cause any affection even remotely resembling itch; and he justly remarks that since the favourite examples of the homœopathists for their doctrine completely break down on investigation, it would be useless to pursue the experimental research further. But our author does much more than this, for he shows that this doctrine of similars, which ought to have been a principal of universal application, according to Hahnemann, was never clearly conceived or expressed by him; that he repeatedly contradicted himself in his explanations of its applicability to the phenomena of disease; that he was compelled to admit its complete failure in the treatment of chronic maladies, and the necessity of relying here on that very *experience*, the *usus in morbis* at which he had

railed so bitterly in his earlier writings; and further, that great numbers of the abler homœopathists, since his day, have admitted freely that it is impossible to get reliable results, in the treatment of disease, by adhering to the principle of similars in the selection of remedies. He exposes also, with great fulness, the absurdity of the principle of mere enumeration of the symptoms produced by diseases and by drugs, respectively, showing that not only is it unreasonable to expect any accurate guidance from such data, but that as a practical result of the system the best homœopathic writers declare that their Materia Medica is a mere chaos.

Dr. Rogers is equally successful in exposing the utter unsoundness of the doctrine of the increased potency of medicines in consequence of their dilution. As regards the more extravagant statements that had been made, it was needless to add anything by way of refutation to the striking tabular calculations made by Sir James Simpson (and reproduced by our author), which first showed in plain figures the physical facts involved in the idea of the homœopathic dilutions. We shall only reproduce one of these calculations—that of the proportion of any remedy which can be contained in globules of the 30th dilution, which was the potency ordinarily employed by Hahnemann in the latter part of his career:—"The proportion of any drug in the 30th dilution, or the decillionth globules of the homœopathists, is to the sugar contained in the globules, as one grain is to 61 quintillions of spheres of sugar, each of these 61,000,000,000,000,000,000,000,000,000,000 being of the dimensions of the earth." The use of globules of this dilution, and of tinctures of no greater strength, is still continued by many homœopathists, and there are even those who insist on the value of much higher dilutions! But it would be a waste of time to argue about the value of such ridiculous remedies; the more so as a large number of homœopathists have publicly declared their disbelief in the efficacy of any but quite the lower dilutions (1st to 5th); and, indeed, it is no secret that some of the ablest homœopathic practitioners in this country habitually employ doses of drugs which are very little inferior in strength to those sanctioned by the regular profession. Dr. Rogers is quite as cogent in his arguments against such doses as the one-hundredth of a grain of ipecacuanha, for instance, as against the highest dilutions; and he shows that if modern homœopathists are justified in assuming, that cures supposed to have been made by the higher dilutions were really mere efforts of nature, there is no reasonable ground for rejecting a similar explanation of the results of treatment with the lower dilutions. He shows, moreover, that Hahnemann argued with the strangest inconsistency on the whole question of the dilution of drugs, some-

times defending it (as in the case of arsenic) on the ground of its *lessening* the dangerous power of the agent; while in other cases he supposed that it indefinitely *increased* the potency; and he remarks on the peculiar, not to say highly suspicious, circumstance, that Hahnemann quite suddenly adopted[1] the principle of using very small doses, at a time when the opposition of the German druggists (excited by his illegal practice of dispensing his own medicines) was making him anxious to discover a compendious method of preparing remedies which would render him independent of the tradesmen. Immediately before this time he had been employing doses which most orthodox practitioners would consider very large.

In short, by an exhaustive consideration of homœopathy, both in its theoretical and its practical aspects, our author leads us irresistibly to the conclusion that as a system it is confused, self-contradicting, and devoid of any guiding principles which will for a moment bear the light of modern scientific criticism; that the remedies it recommends must, by all scientific analogy, be pronounced incapable of affecting the human body; and finally, that the results of homœopathic practice are neither better nor worse than that of purely expectant treatment in which no remedies are used; but that nevertheless it was a distinct improvement, in the interests of human life, upon most of the systems upon which drugs were administered down to a comparatively recent period. Here, however, we part company from Dr. Rogers. We are willing to admit, with him, that this view of homœopathy greatly and justly strengthens the position of those who plead for the study of the natural history of disease; or rather, we should say, it would have been a most important reinforcement of their argument some twenty-five years ago, when scarcely any one in this country dared to allow an acute disease to run its course without the interference of powerfully perturbing medicines. But we think it may now be fairly said that we know, substantially, all that can be known about the natural unchecked course of those acute diseases which, in ordinary circumstances, tend to recovery, and usually prove fatal only through complications. And both as to the source of this present knowledge, and as to the further use to be made of it, we have some considerable differences with Dr. Rogers. It may be true that homœopathy was the immediate cause of some of the more formal experiments in the direction of pure expectancy which were made in Germany by Dietl, and others. But one has to go much further back than Dietl, and to a much less narrow field of thought than that ploughed by

[1] This curious fact has also been sharply commented upon by the author of a very able series of papers on Hahnemann and Homœopathy published in the *New York Medical Gazette* for 1869.

the thin-minded Hahnemann, or even by his more liberal followers, Caspar, Hempel, Roth, Meyer, Dudgeon, &c., in order to trace the true origins of the modern rebellion against the doctrines of the phlebotomists, the salivators, the wholesale advocates of depletary purgation, and all that genus. The note of reform was sounded by John Brown in the "Elementa Medicinæ," published in 1780, but sketched out several years previously. This work immediately occasioned one of those great commotions of medical thought which invariably precede large practical reforms in medicine; but it came before its time, and consequently could not sustain its first *prestige*. Brown demonstrated, with an extraordinary force of genius, the disastrous tendency of the current metaphysical views of vital and morbific force, which led physicians to conceive of disease as a powerful and malignant entity, to be combated by strongly depressing remedies; but unhappily for medicine he could not himself escape from the metaphysical method of speculation, for the true inductive method of inquiry was impossible in the then rudimentary state of animal physiology. In order to understand the extraordinary fluctuations of opinion which caused the doctrines of Brown to be successively supplanted by those of the Italian school of contra-stimulus, and by those of Broussais, with his universal inflammatory hypothesis of disease, one has to recall to mind the slow growth of that modern science of healthy and morbid physiology of which John Hunter sowed the seeds in the last years of the eighteenth century. Nevertheless, the Brunonian doctrine never entirely lost its hold on men's minds, and from time to time assurances of its continued vitality were given by the occurrence of partial revivals of the stimulant and supporting treatment of fevers; till, in the second quarter of the present century, we meet, in Graves of Dublin, with a physiologist who had learned that acute pyrexial disease, so far from being a morbid *plus* condition of vital power (as was hastily judged by earlier pathological anatomists, from the post-mortem appearances in febrile disease), depended on causes which were directly debilitating to vital power: and it may be safely affirmed that Graves had not been led to this view by the spectacle either of the homœopathic or of the expectant practice. There is no need to mention the later and more decided development of the restorative treatment by Todd, and by Bennett of Edinburgh, further than to remark that each of these reformers did in reality justify a large part of Brown's speculative teaching by placing it on a basis of scientific physiology: the modern doctrines of innervation being the *motif* in the one case, the modern cell-doctrines in the other. And lastly, we shall not be contradicted by any one who has studied the course of opinion in the last fifteen or sixteen years, if we assert that the doctrine

of the sthenic nature of inflammations and fevers received the *coup de grace* from the unspeakably important discovery by Bernard and Brown-Sequard of the effects of section of the sympathetic, and we believe that from that moment, although meantime the study of the so-called "natural history" of the diseases which ordinarily run a limited course has been immensely stimulated, it has become apparent we are on the verge of therapeutic discoveries, and a body of positive therapeutic doctrine, vastly different from anything which was possible in the infancy of physiology.

We dissent, then, from Dr. Rogers' estimate of the influence which homœopathy has exerted upon the therapeutics of the regular profession, although we admire his candour and generosity. Upon another and more practical point we are also obliged to disagree with him to some extent. We are ready to concede with him, that the homœopathic principle of using one drug only, at once, is highly important, at least in the case of experimental research: but we are unable to praise so highly, or to expect such large benefits as he anticipates from, mere experimentation with drugs upon healthy persons. On the contrary, we maintain that unless this method of research be constantly and jealously checked by comparative trials of the agent upon the lower animals, and also upon patients suffering from diseases of which the pathology is tolerably well known, it will lead, as it has led in the past, to most erroneous inferences.

We shall conclude this notice of a work which, on the whole, we cannot too highly recommend to our readers, with the expression of a warning and a regret. We cannot help warning the reader to remark that Dr. Rogers, probably because his active work in the profession has ceased for some years, scarcely appreciates the advances that positive therapeutics has made within the last twenty-three years. In view of such discoveries as that of chloroform, bromide of potassium, nitrite of amyl, hydrate of chloral, and several other substances which could be mentioned, we maintain that the era of mere empiricism, or of still more dangerous and delusive speculation without scientific basis, is rapidly coming to an end. And finally, we must regret that Dr. Rogers has taken no adequate notice of a movement which promises to introduce us to a perfectly new field of research; we mean the tendency to subdivision of single large doses of medicines into minute doses which are to be repeated with great frequency. Already there are signs that this method of medication will yield important results, and that the benefits of many powerful medicines may be secured without the physiological accidents which so often render them worse than useless in practice. With these exceptions we have nothing but unqualified praise for his book, which indeed belongs to a class so

far above the average of medical works that the author has nothing to fear, but everything to gain, from impartial criticism.

Renal Diseases; a Clinical Guide to their Diagnosis and Treatment. By W. R. BASHAM, M.D., F.R.C.P.; Senior Physician to the Westminster Hospital, and Lecturer on Medicine, &c, London: Churchill. 1870.

DR. BASHAM has been known for many years as a worker at the subject of renal diseases; he now comes before us with a very useful and handy text-book designed to introduce students to the clinical aspects of these maladies. The work is divided into three parts; the first deals with the acute forms of nephritis, the second with chronic diseases, and the third contains a full and very practical description of the properties of the urine, physical, chemical, and morphological, significant or otherwise of renal disease. The author's purpose, unostentatiously announced in the preface, seems to us very well fulfilled: he has produced a work which will prove useful in clinical teaching, notwithstanding the many excellent works, in this department of medicine, already in the hands of the profession.

It is a melancholy but unavoidable peculiarity in treatises on kidney diseases, that they contain an overwhelming amount of diagnostic and pathological information in proportion to their therapeutical teaching, and consequently there is not much scope for the special functions of this journal in reviewing a work like Dr. Basham's. Whatever can be said on this subject, however, is stated with clearness and conciseness in his book, and the practitioner is provided with clear directions, by the help of which he may accomplish as much as there is any certainty of effecting with safety. The treatment of kidney diseases may be said to be in a transitional stage; we are exceptionally well informed of their pathology owing to the good account to which the fortunately visible indications given during life by the urine, and the microscopic appearances of the organs after death, have been turned by the labors of modern observers; but hitherto it must be confessed that the practical improvements introduced in treatment have been chiefly in the direction of rejecting the more violent and rash procedures which were dictated by insufficient knowledge of the nature of the various kinds of renal disease. Perhaps the best service which Dr. Basham has rendered to the therapeutics of kindney disease was his early and strenuous support of the principle of ferruginous treatment in a number of the chronic varieties. In another department, not belonging to renal disorder properly so-called, he has also done good service; namely, in helping with others to reduce to its proper value the some-

what formidable bugbear of oxaluria, conjured up by Dr. Golding Bird. Great mischief was probably done by the alarm created in the minds of many nervous persons, especially medical men, by the earlier estimates of the value of this symptom, which was first reduced to its proper level by the discovery of its intimate relation to excessive uric acid development. In the treatment of this complaint, or rather symptoms, Dr. Basham has very usefully combated the views of Prout, which inculcated the use of a highly animalised diet similar to that recommended for diabetes.

Perhaps the most useful part of this little work is the section on urine, which is concise and yet sufficiently detailed for practical purposes. We rather regret, however, that the author has not introduced a few diagrams of the principal varieties of microscopic objects with which the student should familiarise himself. On the whole this volume may be recommended as supplying, in a convenient form, an account of the important group of renal diseases which is derived from large personal experience on the part of the author, and at the same time incorporates the results of the recent researches of many other observers. It will probably become a text-book in schools, and a handy book for busy practitioners.

Grundzuge der Arzneimittellehre. Ein klinisches Lehrbuch, von Carl Binz, A.O. Professor an der Universitat, Bonn. 2te neuarbeitete Auflage. Berlin, 1869.

Outlines of Materia Medica. By Carl Binz, Professor in the University of Bonn. London : Bailliere.

Professor Binz is one of the representative men in continental therapeutics, as the readers of this journal have had several occasions to discover. It is not, of course, by a mere text-book like the volume before us that his merits are to be appreciated, as this was probably intended chiefly as a class-book for students, while the author's special abilities have been displayed in more elaborate researches on the action of special substances than could properly find place in so compendious a handbook. As a manual for students it is clear and singularly concise, contrasting in that way very favorably with most of our English text-books ; and it achieves this conciseness in the best manner, by omitting large portions of the merely botanical and chemical topics with which they are overladen, and giving due prominence to the action of the various medicines upon the organism. We have always felt it to be an almost inexplicable thing, that writers on Materia Medica should dwell at such tedious length on what are only the dry bones of the subject, and touch so briefly and perfunctorily on the only aspect of it which can give them life and

interest for the intelligent student, who is thinking about the practical work which is really the object of this profession.

While, however, we bestow due praise on the thoroughly practical and efficient way in which this Manual of Remedies is adapted to the purposes of class-teaching, we cannot refrain from saying that we should be sorry to suppose it is to stand alone. The time is fully come when Professor Binz should bend his attention to the production of a treatise on therapeutics, in the extended sense of the word ; a treatise which should deal not merely with the uses of drugs, but with the modifications of diet, and the appliances of subsidiary measures, such as baths, electricity, and also the use of mineral waters. The crying want of the time is a large and complete work, in which the whole of these subjects should be judged, and should be placed in proper relations to each other, so that not merely the student, but the advanced practitioner, may obtain a clear view of the whole armamentarium of treatment. It cannot be said that any such treatise at present exists, and it is from men of Professor Binz's special talents and knowledge of the subject, and who enjoy the opportunity of undivided attention to it, that we justly expect the supply of our needs.

Clinic of the Month.

Treatment of Chronic Urethral Discharges.—In cases of persistent scanty discharge, the chronic state into which gonorrhœa is apt to pass, Mr. Berkeley Hill examines the canal in the first instance with the endoscope, or with the olive-headed bougie. The endoscope, it appears, has been very unsatisfactory in use; notwithstanding that Mr. Hill employs a light handy instrument, fitted with a fish-tail gas jet instead of the cumbrous paraffin lamp commonly used; but the surface which can be illuminated is so small, and the tube excites so much soreness or discomfort, that latterly the olive-headed bougie has superseded the endoscope in his hands. This can be passed without distressing the patient, and gives very exact indications of the condition of the urethra, distinguishing the diseased from the healthy localities. The bougies used are of black gum, very flexible and slender in the stem, which is marked with a ring at every successive inch from the base of the olive. The head, usually shaped like an olive, is conical, one-third of an inch long from the point to the base. When passing along the uretha this conical head is impeded by any inequality in the mucous membrane, and causes a little smarting as it passes over an excoriation or inflamed part; but when the obstruction is passed by the head, the slender stem allows the instrument to travel along without inconvenience, till the next thickening is reached. In withdrawing the bougie, the base of the olive strikes the impediment first, of which the position may be ascertained by noting how much of the graduated steam is within the urethra. So accurate is the olive bougie in revealing the inequalities of the interior of the canal, that a No. 6 will often stop at an obstruction that a No. 9 or 10 ordinary bougie will slip past. Thus the position and length of patches of chronic inflammation, when the mucous membrane has lost its pliancy to only a small extent, but which ultimately becomes indurated masses that seriously contract the calibre of the canal, are detected by the olive bougie at a stage when the ordinary bougie gives no evidence of their existence. In the urethras examined in this way the following conditions were found: stricture 62, tender points or excoriations 30, false passage 1. Some of these obstructions were also examined by the endoscope, and were then seen to be deep

red patches on the mucous membrane, or in a few instances actual excoriations of the surface were observed. Besides the ordinary remedies of cubebs in frequent doses, &c., many of these cases were treated by injecting a few drops of caustic solution (one scruple to an ounce) of nitrate of silver directly on to the diseased points by a syringe contrived for the purpose. A few applications thus made have cured discharges that have lasted several months and resisted multifarious treatment. If the canal is contracted as well, the treatment is continued by passing bougies until the calibre of the canal is restored. (See *Lancet*, Feb. 26.)

Quinine in Relapsing Fever.—In three cases of relapsing fever admitted into St. Bartholomew's Hospital large doses of quinine were administered immediately before the anticipated relapse. Two cases received each ten grains on the afternoon of the thirteenth and morning of the fourteenth day of the fever, and five grains for four succeeding mornings. The third case had one ten-grain dose on the thirteenth day, followed by four five-grain doses. The results were most satisfactory, as in none of the patients thus treated did the relapse occur. (See *British Medical Journal*, Feb. 26, 1870.)

New Syringe for the Treatment of Gonorrhœa by Injections.—Mr. Durham recommends the employment of a bottle syringe with a nozzle of peculiar construction, in which the stream of injection, instead of being directed forwards as usual, is made to issue in a direction from behind forwards. (See *Guy's Hospital Reports*, 1870.)

Treatment of certain Forms of Uterine Cancer.—Dr. Routh records several cases of fibro-carcinoma, in which the growth was partially removed by the ecraseur, and subsequently treated by bromine, in which considerable, if not permanent recovery followed. In one case, in which the anterior os was enlarged to the size of a fig, and presented some resemblance, when examined with the speculum, to fungus hæmatodes, the ecraseur was first applied. The hæmorrhage after its use was very great, and solution of persulphate of iron had to be freely used, which led at first to considerable contraction of the canal. When the bromine was about to be applied the catamenia came on. It was subsequently used, however, when this ceased. The pain produced by it for several hours was so intense that it had to be removed. It was applied twice, and the parts assumed a healthy state when the sloughs came away. In a second case, where there was much aching of the back and copious leucorrhœa, with a suspicious growth of hard consistence continuous with the lower lip, the tumour was also removed

with the ecraseur, and shortly after the bromine was applied several times. The ulcer produced would not heal, and occasionally exuded offensive discharges, bleeding freely on touch, but having a hard base. After about six applications of the bromide in the course of two months, all followed by deep sloughs, a solution of bromine was injected into the hardened base. It gave intense pain, but when the slough came away the excavated ulcer healed readily, and the patient made a perfect recovery. She has since had a healthy child. The general remedies used were first arsenic, then iron, and small doses of mercury, as there were some points in the history which rendered it probable that the patient had suffered from syphilis. (See *British Medical Journal*, March 5, 1870.)

Chloroform in the Treatment of Biliary Calculi.—Dr. Barclay, of Leicester, remarks that he has met with very great success from the internal administration of chloroform in cases of biliary calculi, and he gives the following case in point. The patient was a clergyman, aged fifty-eight. He had suffered for twenty-three years from gall-stones; the peculiar pain and jaundice, with subsequent discharge of the calculi by stool, coming on so suddenly and without warning, as seriously and frequently to interfere with his duties. Knowing that ethers are solvents of cholesterine, he ventured, on the occurrence of the third attack in one year, to prescribe chloroform in doses of two or three drops, three or four times a day, on the chance of its reaching the calculi through the blood. To the surprise of the patient, and Dr. Barclay's gratification, the pain, tenderness, distension, and jaundice disappeared together, and in the eight years that have since elapsed he has never had another attack. He keeps a bottle of chloric ether by him for occasional use. Dr. Barclay adds that he has found it to give invariable and permanent relief in many instances since. (Ibid. Jan. 15, 1870.)

The Sulpho-Carbolates in Zymotic Diseases.—At a recent meeting of the Obstetrical Society, Dr. Sansom read a paper on these salts, and referred to their applicability to the treatment of certain diseases of children. The compounds of the acid with sodium, potassium, ammonium, &c., were described, the active agent in each, however, being the carbolic acid. He describes them as being exceedingly soluble, by no means unpleasant to the taste, and as never producing toxic effects. Amongst many cases in which he had tried them, he had found them most useful in zymotic diseases, especially scarlatina, measles, and diphtheritic sore-throat. In these he had chiefly employed the sulpho-carbolate of sodium, in doses of from five to ten grains every four hours. In rachitis, malnutrition, and diarrhœa, he

recommended the sulpho-carbolate of calcium. (See *British Medical Journal*, Jan. 15, 1870.)

Belladonna in the Treatment of Typhoid Fever.—Dr. Kelly speaks in very high terms of this mode of treatment, declaring that "not more effectually is the tetanic action of strichnine on the system neutralized by tobacco and woorara, or paludal fever combated by quinine or removed by chalybeates, than is the poison of typhoid fever counteracted by belladonna. It completely changes the whole character and outward manifestation of the disease. Delirium, coma and subsultus quickly vanish, and are succeeded by calmness and clearness of the intellect, by natural sleep, and complete control of all the voluntary muscles. Diarrhœa is checked, and healthy consistent evacuations are established. The appetite, if excessive or deficient, is restored to something like a normal standard. The pulse, from being frequent, fluttering and compressible, is rendered slow, strong and equable. The morbid temperature of the body—the *calor mordax* of the Roman, the *causus* of the Greek physicians—falls to a natural level. The vital changes induced in the blood, glandular and other organs, as shown by passive hæmorrhages, tenderness of the abdomen, hypostatic congestions and ulcerations, are all arrested *in limine;* and the deranged functions of the economy return to their original equilibrium, and are performed with the same regularity as in health. The patient, after an inconceivably short space of time, usually from twenty-four to forty-eight hours after the first administration of the remedy, wakes up, so to speak, and pronounces himself as well as ever; and, indeed, to look at him, he really appears so. If, however, the physician be not thoroughly on his guard, and do not keep the patient quiet in bed, pending the ordinary course and duration of the disease, serious consequences will almost inevitably follow." In regard to the time and mode of administering belladonna, Dr. Kelly states that, if the patient is seen in the incipient, he usually waits till all or most of the prominent symptoms are well developed before he ventures to prescribe the drug. When the diagnosis is perfectly established, he does not hesitate to give to an adult and vigorous patient from twenty to twenty-five drops of the officinal tincture of the British Pharmacopœia every four hours in a little peppermint water, sweetened with syrup of orange peel. This may be continued without danger for a fortnight, and he has never known any more serious symptoms arise than moderate dilatation of the pupils (which he regards as an admirable criterion of the safety of its therapeutic action) and slight dryness of the fauces. Dr. Kelly has not been able to ascertain whether it prevents a second attack

of the disease. During convalescence he gradually diminishes the doses, and extends the time between the administration. He absolutely interdicts the employment of stimulants in any form. Finally he recommends the following dietary: a quart of soup made from cowheel and a pound of beef, a pint of milk boiled with arrowroot, an ounce of cocoa prepared in a pint of milk. (See *Medical Times and Gazette*, Feb. 5, 1870.)

Relief of Angina Pectoris by Nitrite of Amyl.—Dr. Anstie communicated to the last meeting of the Clinical Society the case of a middle-aged and highly nervous man, who had long suffered from spasmodic asthma, but in whom, during the last four or five years, severe and frequently recurring attacks of angina pectoris supervened. The violence of the affection was to some extent diminished by the employment of sulphuric ether and considerable doses of alcohol, but the attacks still recurred after fatigue or excitement. In December last it was determined to try the nitrite of amyl, and on the recurrence of the next anginal spasm the sufferer took one long and powerful inspiration, through one nostril, from a half-ounce bottle of the drug. After a pause of a few seconds the characteristic flushing of the face and sense of fulness in the head were produced, and the patient instantly passed from agony into a state of perfectly calm repose. The experiment has been several times repeated, and always with success. The action is probably due to the circumstance that amyl is a relaxer of spasm in all involuntary muscular fibres, and it is probable that it will prove particularly useful in colicky affections. Its use requires care in the aged and those who may be likely to suffer from commencing degeneration of the minute vessels of the brain, for fear of apoplexy. (See *Lancet*, March 5, 1870.)

Treatment of Acute Rheumatism.—From a recent essay by Oppolzer, we gather that the therapeutics of this disease are in as unsatisfactory a state in Germany as in this country. The Professor remarks that, as in all acute diseases, the febrile symptoms are the most important in articular rheumatism, for on their violence the prognosis depends. In order to lower the febrile symptoms the remedies in common use are rest, vegetable diet, cold baths, and lotions, and cold applications to the head. The most important agent is venesection, especially when there is any tendency to cranial or thoracic mischief. Quinine in large doses has in some instances proved very serviceable in moderating the fever and diminishing the local affections, though both are apt to recur when the quinine is suspended. Digitalis constitutes a depressing agent, acting both on the pulse and temperature; it, however, exerts less influence on

the heart in febrile states of the system than in health, and its action is, at the same time, less persistent, the frequency of the pulsations soon recurring when the use of the remedy is intermitted. The tinctura veratri viridis acts more quickly and with greater certainty in lowering the temperature and the pulse, but it has unpleasant secondary effects, resembling those of tartar emetic, producing vomiting, purging, and collapse. It is employed, however, by the Americans in combination with tincture of ginger and tincture of opium. The use of nitrate of potash in large doses (half an ounce), as recommended by the French, Professor Oppolzer thinks much too dangerous. He confines himself to three remedies to combat the fever, namely, diet, venesection and lime-juice, of which last he allows six ounces a day, with sugar *ad libitum*. When the pain, swelling, and redness are considerable, he applies leeches and cold lotions. When several joints are affected, he wraps round the whole body a cloth dipped in cold water, and well wrung out, and surrounded by dry wool. To relieve the pain he considers opium and morphia inestimable. Subcutaneous injection may be adopted at the joint inflamed, and a quarter of a grain of morphia or a grain of opium may be thrown in. When the pain is very severe, this may be done every two hours. Colchicum has long been celebrated as a remedy against rheumatism. Oppolzer administers it in the form of the alkaloid colchicum in minute doses, and it may be combined with aconite, which has also long been celebrated for its power of diminishing pain and lowering the frequency of the pulse. When the pain is intense, great relief is obtained by embrocation of the chloride of elayl. When swelling remains in any joint after the subsidence of fever, it may be dispersed by the local application of tincture of iodine. (See *Der praktische Arzt*, No. xii. 1869.)

Extracts from British and Foreign Journals.

Treatment of Variola.—In an interesting paper by Dr. Pepper, of Philadelphia, containing an account of a severe epidemic of variola that occurred in the year 1865, and of which upwards of thirty-three cases were under his observation, with five deaths, we extract the following remarks. From careful examination of the history of the cases, the conclusion was drawn that vaccination appears to furnish almost complete protection against the occurrence of either varioloid or variola, during the first six years of life ; and the importance of this result is enormously increased by the additional fact that all the fatal cases occurred under four years of age. In subjects not vaccinated the greatest susceptibility seems to be during the first two years of life, at which time the form of the disease is very apt to be confluent. When vaccination fails from any cause, the operation should be repeated at short intervals, varying the virus, and perhaps the mode of insertion, until success is obtained, or all danger of exposure to contagion ceases. The attempt should be made again after a few years' interval. There appears to be very little risk when vaccination has preceded exposure to contagion by so short a period as two years. Yet even then it should be practiced, where there is much danger of exposure, to ensure immunity, and the necessity for revaccination becomes more and more urgent with every additional year's interval. When the protective power of vaccination has become exhausted, the subject may contract any form of variolous disease, though the chances are very much in favour of the occurrence of an attack of varioloid or a mild form of variola, no matter how long a distance of time has intervened after vaccination has been performed. It may be safely laid down as a rule of practice that whenever an individual, especially a child who has never been vaccinated, or only at a distance of two or more years, has been exposed to the contagion of variola, vaccination should be immediately performed, unless it is positively certain that the stage of incubation has so far advanced that the vaccine disease will not have time to be developed before the appearance of the variolous eruption ; unless, in other words, the initial symptoms of the varilous disease have appeared. We

cannot here notice the account of the symptoms, complications, sequelæ, or results, but pass on to the treatment. This was very uniform, so far as concerns the remedies employed, and consisted in the administration of a febrifuge diuretic mixture, sulphate of cinchonia, and whisky, in almost all the cases, with a few other drugs which were used only in exceptional cases. The febrifuge mixture contained: Potass. acetat. 40 grains; sp. æther. nitrosi, 1 fluid ounce; liq. ammon. acetat. 3 fluid ounces—ft. mist. Of this from a teaspoonful to a tablespoonful was given, according to the age of the child and the degree of fever, from four to eight times a day. In most of the cases of varioloid the use of this mixture, with the regulation of the diet, constituted the entire treatment. In a few of the cases of varioloid, however, and in nearly all those of variola, either the tinct. cinchon. comp. or the sulphate of cinchonia was used as a general muscular and cardiac tonic, with the object of counteracting what constituted a most alarming symptom in many instances, namely, the marked tendency to debility and failure of the powers of the circulation. In only two cases of varioloid was any whisky given, but all the cases of variola under five years of age took two ounces of whisky daily, and apparently with favourable results. In those who were more than five years of age the amount given had reference in every instance to the state of the patient, and varied accordingly from two to eighteen ounces daily. Opium was given freely in full doses at any stage of the disease when the nervous restlessness or pain was so marked as to prevent refreshing sleep. It was found especially useful during the stage of secondary fever. In cases occurring more recently, bromide of potassium was given in large doses during the maturative fever, and in most instances was found to act admirably in quieting agitation, and securing refreshing sleep. Nausea and vomiting were treated by the external applications of sinapisms over the stomach, and by the administration of small fragments of ice, and of small quantities of lime-water and milk. Where the bowels were constipated, repeated doses of the tincture or the aromatic syrup of rhubarb were administered, aided in their action by enemata at times containing castor-oil, so as to secure at least one full evacuation every forty-eight hours. Diarrhœa was rare, and when present readily yielded to chalk and opium. The diet was invariably highly nutritious, and consisted chiefly of milk, with or without arrow-root, beef-tea or Liebig's extract, and eggs. After the subsidence of the secondary fever, iron, usually in the form of tinct. ferri sesquichloridi, combined with spirits of nitric ether, was prescribed, and its use continued in conjunction with small doses of sulphate of cinchonia and nutritious diet throughout convalescence. (*American Journal of Medical Sciences*, Oct. 1869.)

Treatment of Polypus of the Rectum.—Mr. Miller, in a paper read before the Medico-Chirurgical Society of Edinburgh, divides polypi of the rectum, which on the whole are rarely met with, into: 1. The mucous or glandular, which is soft, bright red, compressible, spheroidal, or vermiform, and composed essentially of tubular glands; 2. The fibrous, which is globular or oval, dense and hard, and composed of connective tissue; and 3. The various malignant forms described under the terms epithelial, schirrous, and villous tumours. The glandular form is most frequent, the fibrous the rarest. In regard to the mode of removal of these growths, Mr. Miller observes that the knife, scissors, ligature, and nitric acid have all been recommended and used, but he has no hesitation in saying, after careful investigation of recorded cases and facts, that the ligature is the safest and most proper instrument to employ. The polypus may be cut off immediately afterwards, but the ligature should always be applied as a precautionary measure. Several surgeons have cut away glandular polypi, and they have been torn off by efforts of straining at stool, without any serious hæmorrhage occuring. But from the results of careful examination of these growths after removal, it is evident that their vascularity is such as to necessitate precaution. However non-vascular in appearance, a polypus should not be removed by the single stroke of a knife or pair of scissors. No tumour could have appeared more decidedly non-vascular than one which he removed, hard, pale, and without sensibility; and yet there was a vessel in the pedicle, which if it had not been secured by ligature, would certainly have given rise to troublesome hæmorrhage. It may be borne in mind also that the polypus once removed, its origin will not easily be reached and exposed for the purpose of applying hæmostatics. Serious hæmorrhage has occurred after removal of these growths, and plugging of the rectum has been had recourse to on more than one occasion: hence he thinks the ligature, either alone or followed by scissors, is the proper mode of treatment. (*Edinburgh Med. and Surg. Journal*, Jan. 1870.)

Employment of Ergot in Aneurism of the Aorta.—This method of treatment is upheld by the high authority of M. Langenbeck, on the ground that ergot induces contraction of the smooth muscular fibres, and thus acts as a powerful agent in producing hæmostasis. A case is recorded in which, in a man aged 45, with subclavicular aneurism of the right side, a tumour had formed the size of a small apple. The patient was deprived of sleep in consequence of the violence of the pain; the hand was atrophied. On the 6th January, 1869, M. Langenbeck injected about half a grain of an aqueous extract of

ergot under the skin covering the tumour, together with 40 grains of Boujeau's extract or ergotine, 100 grains of alcohol, and 100 grains of glycerine. The next day considerable diminution of the swelling was observed. From the 6th January to the 17th February about 35 grains of the ergotine had been injected, the injections being made every third day, and the quantity injected varying from one-half of a grain to one grain and a half. Progressive improvement followed, and he was soon able to write a long letter. The aneurism still presents pulsations, but much more feeble than before, and its size had considerably diminished. He cites another case, in which an aneurism of the size of a nut on the right radial was rapidly cured by the same means. (*Bulletin General de Therapeutique*, December 30, 1869.)

Chloral in Hooping Cough.—M. Ferrand highly extols chloral as an agent which, easily administered, and producing no ill effects, is admirably adapted to relieve attacks of hooping-cough which are not of a serious nature. He tried it in the first instance on the children of a family recently arrived in Paris. After adopting various treatments for more than a month without beneficial results, he administered about five grains of chloral, dissolved in simple syrup, three times a day. The results were unexpected. The children slept well, without interruption as before from violent attacks of coughing. An attack occurred for a few days in the morning, but soon ceased, and in about a fortnight they were all nearly or quite well. M. Ferrand considers that the action of chloral and of chloroform are essentially different, and agrees with M. Gubler in thinking, that whilst the latter acts on the sensory nerve-cells and produces death, by inducing anæsthesia and gradual loss of muscular power, chloral seems to be a poison acting on the heart, which it paralyses before acting on the other elements of the motor system. It ought to be mentioned, that in the cases above referred to, M. Ferrand had previously employed chloroform without effect. (*Bulletin General de Therapeutique*, Jan. 30.)

Effects of Tobacco.—Dr. Parker, of New York, says in a recent letter, that it is now proved beyond all doubt that tobacco is a poison. Cigar makers, snuff manufacturers, &c., have fallen under his care in hospitals and in private practice, and he has observed that such persons never recover soon and in a healthy manner from any case of injury or fever. They are, he considers, more apt to die in epidemics, and more prone to apoplexy and paralysis ; and this is true also of all that chew or smoke much. There is some evidence that this poison enfeebles the mind. The Emperor Napoleon had his attention called to this subject

in 1862 by a scientific statistician. It was observed, from 1812 to 1832, that the tobacco tax averaged twenty-eight millions of francs annually, and there were eight thousand paralytics and insane in the hospitals of France. In 1862, the tobacco revenue had reached one hundred and eighty millions, and in the hospitals were forty-four thousand paralytics, &c. The obvious inference is, that tobacco has a strong influence in producing these classes of nervous diseases. (*Medical and Surgical Reporter*, No. 666, 1869.)

The Use of the Lung Tube in Intestinal Obstruction.—Dr. Burritt communicates three cases in which, after obstruction of the bowels had lasted for many days, and various forms of medicine and ordinary injections had been administered without result, copious evacuations were obtained by the introduction of a long tube, through which warm water, solution of belladonna, and other remedies were injected with the best results. The great point in regard to its introduction is, he thinks, to pass constantly a stream from the tube ahead of its own passage. The tube passes more easily when the patient is lying on his left side, and is afterwards turned on his back. Most of the cases he has seen were without any discoverable tumour, and the locality of the obstruction uncertain. The only resistance is at the sphincter. The discharge of air from the intestine *per se* renders the patient more comfortable. (Ibid.)

The Subcutaneous Injection of Corrosive Fluids.—Professor Richet, in Paris, has lately occupied himself with experiments, in which he has endeavoured to remove tumours by what he has termed interstitial cauterisation. He introduces the caustic substance, not in the solid form, but in the fluid, by the aid of a Pravaz's injection syringe. He was incited to these experiments by the success which attended those of Berard, who employed caustics thus subcutaneously injected for the cure of erectile vascular tumours, and he hoped to extend this method of treatment to a variety of other tumours. Berard experienced some bad results, but he used the bichloride of mercury. M. Richet determined to use the chloride of zinc, which, whilst acting locally as a powerful caustic, has no remarkable toxic action on the system generally. Bonnet had already used it in the solid form, especially for the destruction of fatty tumours and sebaceous cysts; and as these have little vitality and show little reaction, Richet began his experiments with them. For this purpose he injected four or five drops of chloride of zinc, that had deliquesced from exposure to the air, and he obtained the following results:—When the cysts were true lipoma (pure fatty tumours), after the lapse of a few days they could be most easily squeezed out of a very small opening made in the skin at

the point of injection, and this even when they were of considerable size; when, however, the apparent sebaceous tumours (of the head) happened to be composed, as they sometimes are, of concentric layers of connective tissue, or of the remains of effusion of blood, this mode of treatment proved of no service, and it was necessary to resort to the knife. M. Richet also found this method serviceable in cases of adenitis suppurativa, or scrofulous suppurating glands, which rapidly disappeared with abundant suppuration. (*Wiener Med. Wochenschrift*, No. 90.)

Treatment of Convulsions of the Perinæum, attended with Laceration of the Urethra.—Dr. Rogers, of New York, makes some remarks on this subject *a propos* to a case that came under his observation some time ago. In this case, soon after the receipt of the injury, which was followed by inability to pass the water, a tumour rose in the perinæum, which rapidly attained large dimensions. A trochar was passed into the bladder through the rectum, but little urine escaped; incisions were made in the swollen parts, and the man gradually improved, but still suffered from a traumatic stricture, some sinuses, and a urinary fistula in the perinæum. In this condition he was seen by Dr. Rogers. It had been found impossible at any time after the injury to pass a catheter, and several efforts had been made with the nitrate of silver to close the fistula. On examination three months after the injury, a stricture just admitting No. 4 catheter was found at the end of the bulbous portion of the urethra, and on introducing a sound through the fistula, the two came into contact. The urine passed in about equal quantities by the two passages. It was thought that systematic dilatation by the use of the sound would cure the stricture, and in time the fistula, and to expedite the process, the stricture was divided, and a No. 12 catheter then easily passed into the bladder. The perinæal wound was closed over it by silver wire sutures. Great reduction in the size of the fistula occurred, but it still remained. The track of the fistula was now traversed by a thick iron wire carried across the perinæum, which set up much inflammation, but did not close the fistula. A hypodermic syringe charged with liquid chloride of antimony was made to penetrate the fistula, near its upper part, and the fluid injected; severe urethritis followed, with considerable inflammation of the fistulous track. When this had subsided, a No. 8 catheter was introduced, and the urethra freely laid open to the extent of an inch and a half at, in front of, and behind the original stricture, but the urine still escaped freely by the perinæal opening. On the third week of the operation strong nitric acid was applied to the back of the perinæal wound, without results; finally the actual cautery was applied through the ear speculum to the deeper

parts of the fistulous track. A repetition of this effected a cure, the patient being able to pass a No. 14 or 15 sound without difficulty five months afterwards. We have not space to follow Mr. Rogers' comments in detail, but he shows that whilst after perinæal injuries it is expedient, in the first instance, to attempt to pass a sound or catheter, this should be done with the greatest delicacy; and as soon as any symptoms of extravasation of urine appear, a free incision should be made in the middle line. But if coincidently there be paralysis of the bladder with distension, or distension of the viscus from urethral obstruction, the open canal behind the point of laceration must be found, and the catheter passed into the bladder, and if this cannot be done at the perinæal incision the urethra must be sought for at a point further back, by extending the incision deeply down to a little in front of the anus, to effect which he quotes the description given by Mr. Simon in his lectures. (*New York Medical Journal*, Jan. 1870.)

Subcutaneous Injection of Morphia as an Aid in producing Chloroform Narcosis.—Dr. C. Uterhart, of Rostock, states that he first tried this method in the case of a drunkard suffering from a dislocation of the shoulder. In this man he adopted the suggestion of Thierfelder, who suggested the subcutaneous injection of morphia in luxations as a means of producing muscular relaxation instead of chloroform. Nevertheless, although half a grain of morphia was injected, no benefit was obtained. Chloroform was therefore ultimately resorted to; and he was much surprised to find that it produced its effect without occasioning any excitation, and much more quickly than might have been expected from the known habits of the individual, and the reduction of the dislocation was speedily effected. He now made an experiment on a dog, in which animal a violent stage of excitement usually occurs when chloroform is employed, terminating in death. Between three and four grains of morphia were subcutaneously injected. The narcosis succeeded satisfactorily, and after the lapse of half an hour the animal was intentionally killed with chloroform. No stage of excitement supervened; it remained perfectly quiet, and required a large quantity to produce death, which occured without convulsions. In some experiments made upon himself, similar results were obtained, the previous subcutaneous injection of morphia appearing to abolish the stage of excitement. He has found it most advantageous in drunkards to inject about half a grain of morphia, which should be allowed to produce its full effect before the administration of chloroform is commenced, ten minutes being usually sufficient between the two. (*Deutsche Klinik*, 1869.)

Milk in Diabetes.—Dr. Balfour, in a clinical lecture delivered at the Royal Infirmary, Edinburgh, advocates the employment of milk as a curative article of diet, which has been so strongly recommended by Dr. Karell of St. Petersburg. It appears that this mode of treatment has been objected to by Dr. Pavy on the grounds of milk containing a peculiar form of sugar, and its unfavourable effect in a patient under his care. This patient, however, was treated not with milk alone, but with milk combined with a full meat diet, and a large amount of suet, obviously, therefore, under different conditions from one who was altogether restricted to milk. In the case recorded by Dr. Balfour great improvement, though not a perfect cure, resulted from its employment; and as he observes, whilst it is a mode of treatment simple, easily procurable, and inexpensive, can easily be carried out at home, and does not exclude the employment of opium, iron, quinine, or any other remedies that may be considered appropriate. The quantity of milk allowed in the first instance may be from four to six pints, and may be conjoined after a few days with a little plain bread and salt, or a salt herring. (*Edinburgh Medical Journal*, Feb. 1870.)

Influence of Lactation on the Health of the Mother.—At a recent meeting of the Academy of Medicine (Feb. 8), M. Decaisne presented a note on this subject, containing the following conclusions: —1. Pregnancy, delivery, lactation, ought to be considered as a chain of natural events that cannot be broken without endangering the health of the mother. 2. A large number of facts have been accumulated, showing that the mother who does not nurse her infant is rendered more liable to peritonitis, inflammation of the uterus, to abscesses of various kinds, to certain chronic diseases, and to cancer of the breast and uterus. 3. It is a matter of fact that various states of the economy which are so commonly regarded as constituting obstacles to nursing the child, as chlorosis, anæmia, certain affections of the stomach, and that state which is vaguely designated debility of constitution, far from being a motive leading the medical attendant to dissuade the mother from nursing her child, ought, on the contrary, to cause him to recommend lactation as a means of re-establishing the functions of her organism. 4. It is unquestionable that some women really are unable to perform the duties of nursing, but excepting in those cases where the health of the mother would be compromised, nursing should always be recommended. 5. It is scarcely worth while to repeat that it is by no means indispensable that a woman should be very robust, and in absolutely perfect health, in order to enable her to suckle her child, or that we be still more *exigeant* in the case of a hired wet nurse. Experience, M. Decaisne ob-

serves, has taught him that, contrary to some ordinarily received opinions, at least three-fourths of the females of the better classes, who are so readily exonerated by the doctor from the trouble of nursing, are perfectly capable of nursing their children, not only without harm, but with positive benefit to their own health. (*La Revue Medicale,* Feb. 12, 1870.)

Digitalis in Orchitis.—Dr. Besnier states that, having frequently seen M. Dibout employ digitalis with success as an outward application in cases of hydrocele, he has adopted the same plan in cases of orchitis, however produced, and the results obtained have been such as to warrant further trial. The mode of procedure he adopted was the following:—The invalid is kept at perfect rest, with the scrotum conveniently raised, and constantly surrounded with compresses soaked in a concentrated infusion of the leaves of the digitalis. The infusion may be either warm or cold, as most agreeable to the feelings of the patient, but under any circumstances they should be kept constantly moist; a covering of oiled silk being placed over all. (*Bulletin Generale de Therapeutique,* Feb. 1870.)

Tubercular Ulceration of the Mouth and Tongue.—M. Trelat, of Paris, describes a peculiar form of ulceration of the tongue to which he observes little attention has hitherto been paid. The first case which particularly arrested his attention occurred in a young man, who stoutly and truthfully denied the previous existence of any syphilitic infection. His general health appeared in all respects good. The affected part presented a hard nucleus on the left side of the tongue, ulcerated at its most prominent part, the ulcer presenting bright red edges, rosy-grey base, with papillary elevations, and a slightly irregular contour. Notwithstanding the man's assertion, it was treated as a case of secondary syphilitic ulceration, but without success, and he left the hospital. Six months after he returned with the disease in the same state, except that it was a little larger, and painful during mastication. Various empirical remedies were now employed, including borax, tannin, and tincture of iodine, but all with equally unsatisfactory results, and he once more left the hospital. Before leaving, however, auscultation had shown the presence of tubercular disease of the left lung, the ulcer on the tongue having existed ten months. Soon the patient again applied for admission, with a second ulcer on the opposite side. There were also some erosions on the surface of the tongue, surrounded by a lively red border; mastication was difficult, salivation abundant and constant. He was insufficiently nourished, and consequently depressed. Under these circumstances a consultation was held with M. P. Broca, and it was agreed to apply the actual cautery. This was done under chloroform

severe pain being experienced on the return of consciousness. Opium was administered, both internally and by means of gargles, by means of which it was assuaged in a few hour. In a few days the eschars separated, but, the surface still appearing yellowish, were touched with carbolic acid. Rapid improvement followed and continued. But the patient afterwards fell a victim to tubercle of the lungs. The author particularly notices that the ulceration precedes in many of these cases any sign of pulmonic disease by many months, though the opposite is most frequent. He believes them to be due to the ulceration of the tuberculous deposits in the mucous membrane. (*Archives Generales de Medecine*, Jan. 1870.)

Arseniate and Oxalate of Iron in Uterine Diseases.—A paper appears by Dr. Field in the first number of a new American periodical, copies of which have been just transmitted to us—*The Journal of the Gynæcological Society*—upon the necessity of associating constitutional medication with topical applications in the treatment of uterine disease. In the course of his observations he remarks that in some of his uterine cases he has found arsenic, and especially arseniate of iron, very effective in removing constipation, and has sometimes obtained benefit from this agent when he has failed to make a successful impression with any of the more commonly used remedies. He also states that in regard to the use of iron generally, he has been much pleased with the action of the oxalate of iron ; for this being a light and tasteless powder, with nothing repulsive in its appearance, can be exhibited in that form to those occasional patients who are unable to swallow a pill. He has been led to value this preparation, however, as having proved in his experience less liable to cause irritation or derangement of the stomach, or constipation of the bowels, than any other form of iron ; and in several instances it has agreed with and benefited patients who from past experience believed themselves unable to take iron in any form.

Therapeutical Properties of Turpentine.—M. Benoit observes that, applied as an external agent, it acts admirably as a rapid rubefacient, and has hence been employed for sciatica, lumbago, bronchitis, and chronic peritonitis, in recession of the exanthemata, and metastatic forms of rheumatism, and he thinks its use in these cases is too much neglected. Its value as an internal remedy is more difficult to establish. The disagreeable nature of its odour and flavour constitute great objections to its employment ; nevertheless, it is by no means a remedy of recent introduction into practice. Owing to the recommendations of Recamier, it has been extensively employed in sciatica, and when given in small doses causes heat, accompanied by sweating

of the lower limbs, especially in that affected, and along the course of the nerve affected, features of its action that did not escape the notice of Cullen and Home; and it is remarkable that the more violent the pain the more probable is it that it will prove of service. In larger doses it has enjoyed some celebrity as a remedy against tetanus, muscular contraction, worms, hepatic colic, intermittent fevers, and diabetes, whilst its hæmostatic properties seem to be well established. Trousseau convinced himself that it was a valuable agent in curing catarrh of the genito-urinary tract, especially in the chronic stage. The observations of Trousseau have led to its employment in leucorrhœa, blennorrhœa, gonorrhœa, and catarrh of the respiratory tubes, with great advantage to the patient. On the same principle it has been used in phthisis, and especially in chronic bronchitis. The best mode of administration is by the capsules. (*La Presse Medicale Belge*, Feb. 20, 1870.)

Puncture of the Abdomen in Pneumatosis Gastro-intestinalis.—Dr. Stein, of Bayreuth, observes that the puncture of the abdomen by means of a fine trochar is an operation of so simple, and at the same time, as shown by experience, of so harmless a nature, that it is surprising it is not more frequently performed, either as a means of preserving life, or as a palliative means. Niemeyer is indeed opposed to it. Kohler only considers it admissible as a *dernier ressort*. Hochstetter details a case of acute tympanitis from eating unripe fruit, where, though proposed, it was not allowed to be performed on account of the supposed danger attending it, and the patient died in two hours. Oppolzer and others have occasionally tried or recommended it. M. Stein has performed the operation in two cases. One was a young woman with a large ovarian tumour compressing the large intestine, and leading to tympanitis of so severe a character that suffocation was threatened. A puncture was made with a trochar in the cæcal region with great relief to the patient, and the operation was then repeated once or twice a day for about fifty times, each time with the greatest advantage, and the express wish of the patient. After death, which resulted from the primary disease, scarcely any marks of the puncture were visible, and there were absolutely no indications of past or present inflammation of the peritoneum. The second case is too long to give a satisfactory abstract of, but in it also frequent puncture was adopted below the ensiform cartilage, which, though the marks were clearly visible after death, had certainly produced no injurious effects. (*Deutsches Archiv fur Klinische Medicin*, Band vi. Heft iv. 1869.)

Hypochloride of Soda in Saturnine Discoloration of the Skin.—M. Mehu refers, in the first instance, to the mode in

which the skin becomes discoloured in those who are workers in lead, by the action of the sulphur which the epithelium, in common with all albuminous compounds, contains, amounting to about one per cent., and the remarkable blackening which occurs when such patients are exposed to the action of a bath containing sulphuretted hydrogen. The sulphur so deposited is remarkably insoluble in water, in dilute acids, and in alkaline and sulphuretted alkaline solutions. Fortunately, however, this black discoloration can be removed by the action of hypochloride of soda; and M. Mehu has found the best results to follow from the immersion of the whole body in a bath containing 400 grammes of chloride of lime (dry), 800 grammes of crystallized carbonate of soda, with 10 litres of water. The chloride of lime should be dissolved in water, the insoluble portions being removed by filtering; to the clear liquid should then be added the crystallized carbonate of soda, also dissolved in some of the water. Some carbonate of lime falls, and the clear liquid retains the hypochloride of soda in solution. This fluid may then be poured into an ordinary bath, the smell being, if considered disagreeable, covered with a few drops of an alcoholic solution of essence of lemon, or with a little eau-de-cologne. The patient should be exposed to its influence for three quarters of an hour, the skin being vigorously rubbed with the hand, or scrubbed with a brush. He gives the details of a case where a workman had been thoroughly blackened by a bath containing sulphuretted hydrogen, but who to his own astonishment left the bath with a clear skin of its natural tint. Although the patient repeated his sulphurretted hydrogen bath a day or two afterwaards, no alteration of colour was produced, the hypochloride appearing to have remove all the lead present. The discoloured skin is hard and dry and rough, but after the action of the hypochloride it regains its smoothness and flexibility. In some instances a few ounces of carbonate of soda may be added in excess, to render the solution more alkaline, for the *rationale* of the action of the hypochloride appears to be that the salts of lead are converted into the condition of chloride, passing, if in the state of sulphuret, through the intermediate stage of the sulphate by the agency of the hypochloride; and the chloride of lead so produced is, as is well known, tolerably soluble in solution of the alkaline chlorides. (*Bulletin Generale de Therapeutique*, Jan. 30, 1870.)

Therapeutic Value of Permanganate of Potash.—Dr. Williams, of Springborough, Pennsylvania, desires to call the attention of gynæcologists to the value of this remedy in cases of excessive purulent and prolonged lochial discharge. He records a case in which, about the fifth or sixth day after delivery in a primipara, the lochia, abundant from the first, became

purulent and highly offensive. The medical man in attendance assured the friends that the discharge would cease spontaneously, and that no treatment was required. Dr. Williams was, however, called in, and on his first visit found the discharges so indescribably offensive that they could not long be borne. An injection was immediately ordered to be thrown into the vagina, containing 10 grains of permanganate of potash, dissolved in a pint of water, and to be repeated twice a day. In two days the fœtid odour was removed, and the discharges were not only natural in appearance, but far less copious. The treatment was continued two days longer, and the patient was pronounced cured. Experience derived from other cases has shown him that this salt will not only destroy fœtor, but effect a speedy diminution in the quantity, and hence he tried it in simple cases of excessive lochia, and obtained satisfactory results. It has been found of advantage in ulceration of the neck of the uterus occurring in a non-pregnant woman. (*Hay's American Journal*, Jan. 1870.)

Results of Ovariotomy.—Dr. Atler, of Philadelphia, reports the results of 200 cases of ovariotomy. The mortality has been about 30 per cent. The method adopted has been that designated as the "minor operation," characterised by the small extent of the incision in the abdominal walls, and the reduction in size of the cyst, by the evacuation of its contents prior to extraction. In the treatment of the pedicle he uses the clamp; as an anæsthetic agent, he administers a combination of chloroform and ether in the proportion of one part of the former to two of the latter, liquid measure. This he finds to be an effective combination in producing insensibility, safe in its administration, and less liable to provoke nausea and vomiting than either agent uncombined. In the deligation of bleeding vessels he uses the hempen thread ligature. The incision is closed by iron wire interrupted sutures. In operating he stands on the right side of the patient. (Ibid.)

Notes and Queries.

DEPARTMENT OF NEW INVENTIONS.[1]

Chocolate of the "Compagnie Coloniale."—This article is a good representative of the class of well-prepared cacaos, simply sweetened. It is free from the admixture of any foreign ingredients except sugar, and professes to be prepared from the finest specimens of the cacao-bean. The flavour certainly is that of the finest sort, there is no woody fibre, and the roasting and grinding of the bean has been carefully carried out. The proper aroma of the roasted bean is preserved, and the physical quality of smoothness is attained. The article strikes us as good, but somewhat dear, and rather unnecessarily tricked out and adorned with fanciful wrappings and covers. That is all right for the *bonbons*, but breakfast chocolate and luncheon tablets should not be disguised in such a fashion.

Colman's British Corn Flour.—This is a preparation intended to take the place of the various substances known as "Corn-flour," "Maizena," &c. It is essentially a rice-starch, prepared with considerable care as to quality, and with great mechanical perfection. We have tried this extensively for some months, and caused it to be tried by several friends, in every variety of form, as puddings, blanc-mange, custard, cream, infant's food. The result of this experience is, that although the new food is not superior, perhaps not quite equal, to some other "corn-flours" for the purpose of making puddings, it is superior to them as a basis for blanc-mange and cream for invalids and infants. It is really often very important to secure a means of making a delicate and thoroughly palatable blanc-mange, containing a certain amount of farinaceous matter, and that made from the new preparation has the advantage that it is equally agreeable when taken hot and melted, or cold and stiff. In this respect Colman's corn-flour is an acquisition to the nursery and the sick-room, only we hope that its probable

[1] Under this heading the Editor proposes, in future, to give short and impartial criticisms of new drugs and articles of diet (with analyses and microscopic inspections by competent authorities), and of new mechanical appliances in practical Medicine and Surgery.

popularity will not induce nurses and mothers to err on the side of giving too much starchy matter to very young infants.

Gaiffe's Appareil d'Induction Volta-Faradique.—This is a very neat and handy portable, indeed pocket, apparatus for applying the interrupted current: it is scarcely larger than a duodecimo volume. The current is generated from two cells of a chloride of silver battery; the coil is of the ordinary form of these small apparatuses; the hammer is a particularly neat one, and can very readily be managed, so as to increase or diminish the rapidity of the interruptions. We have tried the apparatus very thoroughly, and have to report as follows: it has been used forty-eight times, the length of the *seances* varying from five to fifteen minutes, and at present there appears no want of power. The secondary current is an extremely active irritant, both to skin nerves and to muscles: the fault, indeed, of the apparatus is, that this current, even at the lowest intensity of the coil, is too painful for delicate and sensitive persons, and too fatiguing to muscles which have only very feeble contractile power. The primary current is more manageable, and with the lower powers of this it is possible sometimes to get effective action of a muscle without disturbing the skin nerves materially, unless they are hyper-sensitive. The apparatus is well fitted for the treatment of hysterical and other anæsthesiæ; it partakes, in this respect of the characteristics of the magneto-electric machines. We do not, however, like the form of wire brush which is supplied; a much more effective form is that supplied with Stohrer's induction machines. For the treatment of facial palsy, rheumatic paralyses, and of the simpler cases of lead palsy, as also for the restoration of muscles only slightly wasted from disuse after hemiplegic attacks, the apparatus will probably prove very useful. It certainly cannot compete, for general efficiency, with Stohrer's machines, but, on the other hand, is much cheaper and more portable.

CORRESPONDENCE.

Blisters in Herpetic Neuralgia.—We have received the following from Dr. J. K. Spender, of Bath:—"There is a remark in your paper on the 'Theory of Counter-irritation,' in the last number of the *Practitioner* on which I am happy to offer some personal testimony. You say that when blisters are used in the treatment of neuralgia, they should be applied, not directly to the seat of pain (for then they only aggrevate the suffering), but to a posterior branch of the spinal nerve-trunk, from which the painful nerve issues. This doctrine is so true, that for twelve years and more I have found only one remedy to give decided and

permanent relief in the neuralgia of herpes zoster of the trunk, and that is, a blister applied just on the side of the spine corresponding to the seat of the disease. The blister should be allowed to rise well, and be kept discharging for two or three days; it may then be gradually healed by any simple ointment. This plan has not once disappointed me, and has produced effects more lasting than the subcutaneous injection of morphia. We may sometimes profitably reason backwards from therapeutics to pathology, and nothing more commends to my judgment the neurological theory of rheumatism than the unquestionable efficacy of blisters. Dr. Broadbent has also noticed (*Lancet*, March 14, 1868) how the so-called 'muscular rheumatism' is sometimes relieved by blisters applied to the skin adjacent to the spinal column."

The Poisonous Dose of Chloral.—A correspondent, "Chemicus," sends us the following: "Having just seen the paragraph on the above subject in this month's *Practitioner*, I am led to think you may be glad to have some particulars of a somewhat similar case lately under my notice, although from a layman.

"With the approval of my medical attendant, I gave four grains of hydrate of chloral to my child, a boy of 3½ years of age, for seven nights in succession, in order to allay the constant sickness dependent on hooping-cough, from which he was suffering. In this the chloral was perfectly successful; and having been administered for seven nights in succession with no apparent bad consequences, it was omitted on the eighth night, and on the next day the patient exhibited symptoms precisely similar to those mentioned by Dr. Reynolds, only of less severity. They yielded to food and stimulants, accompanied by small doses of tincture of nux vomica, and for two days the patient appeared quite well, but on the third day the same symptoms returned with increased severity. The same treatment was adopted as before, and with the same success, and there has been no return of the unfavorable symptoms since. This case seems remarkable from the smallness of the dose employed."

Guaiacum in Quinsy.—The following note from Mr. Horatio Brenchley, of Denmark Hill, was accidentally omitted from our March number:—"I find a paper in the *Practitioner* for February by Dr. Atkinson, recommending guaiacum in quinsy, with gargles of tinct. iodini.

"I copy from my note-book (taken from Braithwaite twelve years ago)—Pulvis guaiaci, gr. x; potass. nitrat., gr. v. 4tis horis; tinct. iodini to the tonsils: and I can state the practice, after some years' trial, to be highly beneficial."

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[1] Any of the foreign works may be procured by application to Kelly, Piet & Co., Publishers and Importers, 174 Baltimore street, Baltimore.

THE PRACTITIONER.

MAY, 1870.

Original Communications.

ON THE USE OF SARSAPARILLA IN SYPHILIS.

BY T. CLIFFORD ALLBUTT, M.A., M.D. CANTAB., F.R.S.

Physician to Leeds Infirmary, &c.

One of the most curious examples of a rise and fall in popularity is the present estimate of the use of sarsaparilla in syphilis, when compared with the estimation in which it was held some years ago. The specific virtues of few drugs have been so highly vaunted as this supposed virtue of sarsaparilla; scarcely any drug in the Pharmacopœia is now so much neglected. It has been a matter of reproach to us that medicines praised one day are despised the next, and the reproach is not, perhaps, without justice. In some instances drugs are discarded for good reasons; they are, and deserve only to be, the invention of a day. In other instances, as may be the case with acupressure or with carbolic acid in surgery, success depends upon a number of conditions which it is difficult to unite, and methods of treatment fall into disuse on account of some complexity in the conditions of their use rather than on account of any worthlessness in themselves. The adoption and disuse of sarsaparilla, however, have no such excuse as this; the revelation of its virtues is to be had with little trouble and under simple conditions, and its disuse has been due only to a curious result of routine. The fact is, the antisyphilitic effects of sarsaparilla depend upon the dose

in which it is given. Because decoctions and infusions are supposed, in all well-regulated prescriptions, to be given in the quantities of two table-spoonfuls three times a day, so sarsaparilla was supposed to be no exception to this arrangement, and in doses of one ounce it was accordingly given. I myself was a victim to this routine, until my attention was drawn to its use in the practice of my late friend and colleague Mr. Samuel Smith, so long the eminent and successful senior surgeon to the Leeds Infirmary.

Mr. Smith gave the remedy in doses of one and two pints a day, and with great success. So convinced were his colleagues of the value of sarsaparilla when administered in adequate doses, that I believe I am at liberty to say that many of them still find in large doses of this drug one of their best remedies. The only excuse I have for bringing the subject forward is, that the treatment has been in use for a quarter of a century at least in the Leeds Infirmary and no one has yet published the results. I may add that, as I have formed a special class for diseases of the skin, so it may be that the antisyphilitic remedies have been more needed in my practice on that account. It is only as a follower of others, however, that I can speak on this subject at all. The remedy is used by us as a decoction, which is made in the infirmary in large quantities. Of this decoction, which differs only in unimportant details from the compound decoction of the Pharmacopœia, we administer from four to ten ounces three times a day, or prescribe some such quantity as a pint or a pint and a half to be taken at will during the twenty-four hours. This medication is expensive no doubt, but that treatment is the cheapest which most quickly cures the patient. The cases in which sarsaparilla is most useful are cases in which the system is thoroughly infected with syphilis, during the tertiary and visceral modes of its appearances.

In persons who are in a thoroughly cachectic state, who have lost flesh and strength, and who are suffering from sluggish ulcerations and indolent gummata, the sarsaparilla is really of very great value. I believe there is scarcely a practitioner among my readers who will not rejoice to hear of a remedy which will help him to cleanse and to re-establish old syphilitic patients,—patients whose constitutions have been undermined

by want of nourishment or by excesses, who have gone through many courses of mercury, whose irritable mucous membranes will not bear any more iodide of potassium, and who are so sallow, so worn, so broken down, so eaten up by disease as to seem fit only for the grave. These persons clear up on such quantities of sarsaparilla as I have named, and it is here that the drug fills so important a gap. It need not, and it will not, supersede mercury and iodide of potassium in straightforward cases, but it has its place where these means have failed, or where they are on some grounds to be avoided. How far we are right in claiming this important place for sarsaparilla can only be known after an extended use of the drug according to our method by the profession at large. No array of my cases can do more than illustrate my opinions, and one or two instances will do this as well as a score.

Take, for example, the following: —— is nominally a laundress, and by practice a prostitute. She is evidently worn down by excesses and irregularities, and will soon be worn out. Her face is sallow and wan, her frame is wasted, her voice is hoarse, her hearing is dull. She has enlarged hard glands in her neck and groin, scars at the angles of her nose and mouth, coppery tubercles about the forehead and eyebrows, a lump of gummous matter in the calf of the right leg, nodes on her tibiæ, and open ulcers on her face and upon her legs. These ulcers are large, numerous, indolent, and characteristic. She makes no secret of her disease, and dates its origin several years ago. She "has had mercury," and her gums bear the traces of it; her irritable tongue and stomach, her anorexia, and her wasting seem to warn us against the iodides. She took sarsaparilla, beginning with half a pint a day, and increased the dose to one pint daily. On this treatment her complexion cleared, the ulcers contracted and healed, she gained flesh and appetite, and in two months she was restored to something like good health. On account of the expense of the drug I often wished to change it for the iodides of iron and potassium, but having found the benefit of the sarsaparilla she begged me not to omit it, and recognized its virtues with the greatest gratitude. This girl was an outpatient, and therefore placed under no new conditions of food or rest.

The next patient whose case I will relate is now an in-patient, but I took her from a gentleman's house where she was much valued as a servant, and had been living with every comfort. I took her in on the 5th of February last, and drew general attention to the case and its treatment in order to test the drug once more for the purposes of this paper. The girl on admission was worn, wasted, and sallow; she had coppery tubercles about both eyebrows, about the alæ nasi, and the right angle of the mouth. Her hair was thin, and her scalp tender, and she had nocturnal pains. On the left cheek over the zygomatic process was a soft gumma about the size of a cob-nut. She dreaded its breaking upon her face, for such lumps had formed in the flesh of her arms and legs, and had burst, giving rise to large ulcers. She was now infested by such ulcers, so as to present a pitiable object. They were on both legs, both above and below the knee, and presented the characteristic punched-out appearance of syphilitic ulcers. They varied in size from that of a shilling to a crown-piece, and there were perhaps seven or eight of them on the two legs. She had been under medical treatment for some time before admission. I ordered her four ounces of decoction of sarsaparilla three times a day, intending to increase it to six ounces. The increase was, however, unnecessary, for she began quickly to improve in complexion, to gain flesh and strength, and to take food. Coincidently with this the ulcers began to close, contracting from their edges towards the centre, the coppery tubercles faded, and the gumma in the muscles of the cheek died away. No local applications were used except simple dressings. I write at the end of one month from her admission, and she is well, or what she calls well. I should now advise for her a gentle course of biniodide of mercury for a week or two, followed by a prolonged course of iodide of potassium.

I will only select one more case from a large number of similar ones. Mr. ——, a gentleman of fortune, who enjoyed every advantage in conditions of life and skilled advice, had never been able to shake himself free from an old syphilis. He had no cutaneous eruption of importance, but was spare, haggard, and sallow; his hair fell off, his appetite was capricious, his bowels irritable, and his strength deficient. He was liable also to neuralgias, which were really dreadful, often amounting to great

agony. They were chiefly cranial, but also of the nocturnal tibial variety. There were many irregularities of the cranium and of the flat bones. Mercury and iodides, though administered under first-rate advice both in England and in Germany, had failed to relieve him; for they were so ill borne that no continued course could be prescribed, whether combined with tonics and nutrients or alone. I advised him to lay in a quantity of sarsaparilla, and to have the decoction made at home, so that he might take it in quantities daily. The medicine agreed with him, and he tried it carefully. He took at most about two pints daily of the Pharmacopœia strength, and he took this for about three months. Altogether he took more or less sarsaparilla for about five months. He found his improvement so satisfactory, that I had no difficulty in persuading him to continue the treatment. His general nutrition improved first, and the "cachexia" abated; in the next place his neuralgic pains diminished and disappeared. Since this time nearly two years have elapsed, and he has remained healthy and vigorous beyond the average of men, being able to hunt four days a week and to carry out many important engagements without any signs of fatigue. Such is our mode of administering sarsaparilla at the Leeds Infirmary, and such are the cases which need it. I hope soon to hear that our practice has been found useful by our brethren elsewhere.

ON CHLORAL IN PHTHISIS, AND ITS ANTAGONISM TO THE POISONOUS EFFECTS OF CALABAR BEAN.

BY JOHN HUGHES BENNETT, M.D., F.R.S.E.

Professor of the Institute of Medicine, and of Clinical Medicine in the University of Edinburgh.

WHAT has struck me with regard to the hypnotic effects produced by chloral, is the fact pointed out by Liebreich, that it causes sleep without exciting the pulse or respiration. In the majority of cases it produces no excitement or uneasiness, nor is it followed by headache, furred tongue, or feeling of depression. With a very few exceptions, indeed, it seems in moderate doses to occasion natural sleep. Under its influence I have seen rabbits motionless breathing tranquilly, and evidently fast asleep, who could be roused so as to take a few steps, or eat a little cabbage, and then, overcome by drowsiness, fall asleep again. The same power of being roused from a moderate dose occurs in the human subject. No doubt the somnolence can be augmented, by increasing the dose, until it becomes soporose or comatose, when stimulants fail to rouse. Of the intensity of this last effect in man, however, little is known; but from what has been observed in the lower animals, there can be little doubt that sufficient coma can be produced to admit of operating without pain. Whether, however, chloral is so easily manageable as ether or chloroform remains to be seen.

The qualities I have described render chloral highly serviceable to the physician. Although in a few instances it has occasioned excitement before sleep, and headache afterwards, in the majority of cases it is not a narcotic but a pure hypnotic. The ill effects so common in the administration of opiates I have not witnessed on giving chloral at all. For example, the

pupil is not contracted more than in ordinary sleep. There is not, for the most part, on waking, the confusion of head, the sense of depression, the furred tongue, want of appetite, nausea or vomiting, suppression of the secretions or constipation, so common after giving opiates. It therefore occurred to me that it would be a most useful hypnotic in phthisis. Here it too frequently happens that cough, pains in the chest, and restlessness at night, if alleviated by opiates, and even by that excellent preparation chlorodyne, leave the patient so depressed, feverish, and weak, as to do more harm than good. Indeed in my own practice I have found that such is the loss of appetite, increased weakness, and emaciation that follow their use, that I never give them except in the last stages of the disease, and when, all hope of prolonging life having ceased, we choose the least of evils in procuring even unhealthy sleep. But matters are greatly changed when we are able to obtain the natural sleep that chloral produces. By its aid we can lull irritation, and give rest for a time, in many cases, without any injury whatever. I have recently made special observations on this point in nine cases of phthisis now under my care in the clinical wards, and have collected the experience of some of my colleagues. (See table p. 264.)

I think it will be admitted that no kind of opiate would have produced such uniformly good, and so few bad results in twenty-one cases of phthisis, as is here shown to have been the effects of chloral. In three cases (2, 5, and 7) individuals slept well habitually, and the remedy only intensified sleep without effecting the head, tongue, or appetite. In one case (case 8) it caused vomiting twice, when taken with cod-liver oil, but when dissociated from it produced no ill effect. In one case (case 4), in addition to cough and restlessness at night, there was considerable sweating, which was much alleviated by the chloral. To assure myself of this fact, it was given ten nights running, always producing good effects, and when stopped the sweating again increased. In one case (case 11) it produced excitement and a state approaching delirium, but the dose was 30 grains. In one case (case 18) the same dose caused slight headache in the morning. In one case also (case 16) the tongue was more furred afterwards. In all the cases the relief to the cough

OBSERVATIONS ON THE EFFECTS OF CHLORAL IN CASES OF PHTHISIS.

No.	Name.	Lesion.	Age	Ward.	Dose.	Time of Administration.	RESULT. (a) Nervous System — Sleep.	(a) Nervous System — Head.	(b) Digestive System — Tongue.	(b) Digestive System — Appetite.	No. of Days taken consecutively.
1	Robert Nisbet....	Vomicæ at both apices...	19	1	gr. xx	10 P.M.	Slept well all night..	Nothing.	No Change.	Improved.	9
2	James Quin.....	Crepitation at right apex.....	29	Do.	Do.	Do.	Ditto..... ...	Nothing.	Do.	Not quite so good.	6
3	Peter Martin.....	Vomicæ at right apex....	30	Do.	Do.	Do.	Ditto.	Ditto.	Do.	No change.	6
4	Wm McLachlan..	Softening at right apex....	24	Do.	Do.	Do.	Ditto.....	Ditto.	Do.	Do.	10
5	Thomas Dixon....	Softening at right apex; slightly at left.....	59	8	Do.	Do.	Ditto.....	Ditto.	Do.	Do.	5
6	William Fen.....	Vomica at right apex; softening (vomica?) at left.....	46	Do.	Do.	Do.	Ditto.....	Ditto.	Do.	Do.	5
7	Elizabeth Croley.	Softening at both apices.....	15	11	Do.	Do.	Ditto.....	Ditto.	Do.	Do.	5
8	Jessie Martin.....	Vomica at left apex.....	—	Do.	Do.	Do.	Ditto.....	Ditto.	Do.	Do.	9
9	Mary Prior.....	Vomica at left side.	21	Do.	Do.	Do.	Didn't sleep for three hours; then slept well.....	Ditto.	Do.	Do.	1
Dr. BALFOUR'S cases.											
10	John Williamson..	Cavity both sides.....	38	9	gr. xxx	Do.	Well	Ditto	Do.	Do.	2
11	John O'Neil.....	Ditto.....	18	Do.	Do.	Do.	Had to be watched for the night, and slept all foren'on	Ditto.	Do.	Do.	1
12	John Burny.....	Ditto.....	37	Do.	Do.	Do.	Well	Ditto.	Do.	Do.	2
13	Mrs. M'Neil.....	Ditto.....	32	13	Do.	Do.	Ditto.....	Ditto.	Do.	Do.	2
14	Mary Duncan.....	Ditto.....	25	Do.	Do.	Do.	Ditto.....	Ditto.	Do.	Do.	2
15	Mrs. Martin.....	Incipient.....	34	Do.	Do.	Do.		Ditto.	Do.	Do.	1
Dr. STEWART'S cases.											
16	James Baxter	Cavities both sides.	35	7	Do.	Do.	Ditto	Ditto.	Furred.	Do.	2
17	Wm. Hamilton...	Incipient.....	21	Do.	Do.	Do.	Ditto.....	Ditto.	No change.	Do.	2
18	John Ross.....	Advanced.....	18	Do.	Do.	Do.	Ditto.....	Slight Headache	Do.	Do.	2
19	Robt. S. Lamblan	Incipient.....	42	Do.	Do.	Do.	Ditto.....	Nothing.	Do.	Do.	2
20	Susan Martin.....	Vomica, left side.....	25	Do.	Do.	Do.		Ditto.	Do.	Do.	1
21	Henry Nisbet.....	Incipient.....	42	Do.	Do.	Do.	Ditto.....	Ditto.	Do.	Do.	2

and restlessness at night, with the production of sound sleep, was most marked, while the head, tongue, and appetite were in no way affected.

For the same reasons that chloral is useful in phthisis, it has been found beneficial in certain cerebral diseases, in which opium is contra-indicated. In another class of cases, however, the valuable qualities of the latter drug in checking secretion, while acting as a sedative, will give it superiority. I refrain, however, from entering into a consideration of the numerous diseases in which the drug has been administered, and which have been recorded by Liebreich and several others. The first step, it appears to me, ought to be a determination of its physiological action; and this, so far as experiment and observation have yet gone, points to its being, in moderate doses of 20 to 30 grains, the purest hypnotic we possess. In doses of 30 to 60 grains it causes excitement, giddiness, and headache more frequently.

Observations to determine the Antagonism between Choral and Calabar Bean.—In five experiments on as many rabbits, fatal doses of the extract of Calabar bean were injected hypodermically, after the full effect of chloral was produced, with a view of determining how far the poisonous influence of the former was counteracted by the latter. In every case the convulsions were checked and life prolonged, but death ultimately resulted.

Experiment 6.—Three quarters of a grain of Calabar bean extract hypodermically injected killed a full-grown healthy rabbit, with violent general convulsions, in six minutes.

Experiment 7.—Repeated in a similar rabbit, after it had taken fifteen grains of chloral. There were no general convulsions, and death occurred in 2 hours and 53 minutes.

Experiment 8.—Repeated in a large healthy rabbit weighing 6 lbs. after it had taken fifteen grains of chloral. No general convulsions, but insensibility and profuse salivation, paralysis, and general muscular twitchings; died in $1\frac{3}{4}$ hours.

Experiment 9.—Repeated in a similar rabbit, weighing 6 lbs. The same phenomena were produced, and lasted $3\frac{1}{4}$ hours, when the animal slowly recovered.

There can be no doubt that three quarters of a grain of the Calabar bean extract employed, made by the Messrs. Smith of this city, would kill any rabbit in from six to eight minutes. The influence of chloral in counteracting this result was most marked, as may be judged of by the above experiments. It has yet to be determined how far other hypnotics and narcotics may, like atropia, as shown by Dr. Fraser, and like chloral as in the above experiments, produce a similar effect.

"NOTE" ON THE USE OF HYDRATE OF CHLORAL.

BY JOHN W. OGLE, M.D.

Physician and Lecturer on Pathology, St. George's Hospital.

HAVING for several years (almost, in fact, since Liebreich's observations on this agent were made known in England) made frequent trials of the effect of chloral, both in hospital and in private practice, I have thought it might now be opportune to add my testimony to that of others in regard to the action of this remedy. In the *Lancet* for October 16th last, a statement was made that I had given the chloral with good results in various cases and in sundry forms of disease. At that date partly from deficient acquaintance with its properties, and in part owing to its rarity and consequent dearness,[1] my doses ranged from four or five grains (for the adult) up to twenty grains, but did not extend beyond. In a slight case of delirium tremens twenty grains had acted well in procuring sleep and quiet, but much less quantities had proved to be serviceable doses in allaying pain and irritation in chronic peritonitis, in rheumatism, acute and chronic. Since then I have given a greater scope to its trial, and have constantly exhibited it in doses up to sixty grains, in several cases commencing with that quantity; and altogether must have given it to between thirty and forty different cases, in many instances for several days in succession. Such being the case, I cannot, of course, give the details of my cases in a mere "note" like the present one; nor, indeed, I imagine would any good follow if I did, inasmuch as, with reference to the effects of the remedy, I should merely have

1 At that time it cost 12s. per oz., and was procured from Berlin by Messrs. Bullock and Reynolds; at present it can be bought for 1s. 6d. per. oz.

to repeat over and over again the same observations, and thus only weary the reader.

In many cases of acute rheumatic fever, even when sleep had previously been for several nights absent or nearly deficient, the chloral has proved most useful in half-drachm doses; and in three or four cases of acute gout the pain and inflammation of the parts have quickly and greatly yielded to it. In subacute and muscular rheumatism similar results have followed. Considering the supposed condition (diminished alkalinity, &c.) of the blood in cases of rheumatic fever, it was interesting to note that it did not appear more necessary to give larger quantities of chloral than in other conditions when the blood was deemed more alkaline. In some cases of scarlet fever much rest and comfort and sleep have followed its use in fifteen and twenty grain doses. In neuralgia, and in some diseases of the nervous centres in which pain was troublesome at the periphery, it has proved very useful, but not pointedly so when the pain has been excessive. For example, within the last few days I tried it in the case of an adult suffering great pain in the abdomen, apparently from a sprain (the spine being probably implicated), causing almost complete sleeplessness at night for several weeks; but sixty grains only caused slight relief. Subcutaneous injection of one-quarter grain of morphia along with one-sixtieth grain of sulphate of atropia caused, on the subsequent night, five hours of good repose.

In one or two cases of want of sleep from over-exercise of the mind (the result of study and teaching) I have found it most useful, and also in the want of sleep of old age. I have not noticed that the drug has had less effect on those who habitually took large quantities of alcoholic drinks than upon others.

In only two cases have any evil or unpleasant effects followed its administration, viz. peculiar sensations and uncomfortableness about the head. In none has vomiting resulted; nausea in some cases has, apparently from distaste, when the chloral was only given in plain water. Dr. Tuke, of Chiswick, has, however, informed me that in a case of insanity its use appeared to be followed by much mental disturbance; and in a case of mania *e potu* which I saw at Claphan with Mr. Taylor, that gentleman said he had twice given chloral in the case without any good result. He had only given it, I think, in twenty-grain doses. Once or

twice I had it injected subcutaneously, but so much local irritation followed that I determined not to repeat its injection. In one case much tingling down the arm which was injected followed. Hitherto I have not had occasion to give it in the form of enema.

But the cases in which I have derived the most satisfaction in giving the chloral have been those in which, by their nature, preparations of opium and morphia have been contra-indicated, as, for example, certain cases of cardiac disease, certain cases of brain disease, in which cerebral congestion appeared to be imminent; but especially cases of so-called uræmic poisoning, in which one naturally feared to risk the use of opium or its derivatives.[1] Its effects in one case of mania, convulsions, and at times semi-coma, in connection with renal disease and syphilis, were very striking.

In many of such cases, general nervous tranquillity and sleep of a most comfortable kind, and frequent subdual of dyspnœa and painful symptoms, have attended its use. In combination with digitalis its effects in some cases of heart disease are often peculiarly satisfactory. As respects the mode of its exhibition, owing to its unpleasant flavour, and in some cases nauseating taste, I have generally given it in the compound infusion of orange with a few drops of spirits of chloroform or spirit of peppermint, or in some recent cases, as recommended by Mr. Squire, with syrup or tincture of tolu. This is a most pleasant combination. In two cases of acute gout, in which I gave it in twenty-grain doses, continued every four hours for several doses, I found no alteration in temperature resulting from its use; neither in these cases, although the acute pain, &c., was diminished, did any manifest hypnotic effect follow.[2] I suppose I

1 I cannot help stating my belief that in kidney disease with uræmic poisoning we may be *too* cautious as regards giving opium. I lately saw a case in which very distressing symptoms in such a condition were relieved by a morphia draught, which I was long in assenting to. I lately attended the case of a lady with renal dropsy (with Dr. White), who had violent pain on breathing down one side of the chest, preventing sleep, in whom morphia, given by Dr. White, acted "like a charm."

2 I propose trying it in several other acute diseases, and in fever of various kinds. I may here also mention the case of a gentleman who was dying with renal disease, in whose case the medical man withheld calomel as an aperient, fearing ptyalism. Much uneasiness in abdomen existed, and was all cleared off by a good dose of calomel given by another attendant.

am not wrong in stating that when great pain has to be antagonized by sedatives, we often find that it is alleviated without any correspondent and positive sleep being induced.

Of course it has also not infrequently happened, as often occurs when other sedatives are given that in certain idiosyncrasies, and under certain circumstances, the chloral does not answer expectations.

In the above observations I have merely given a general *résumé* of my own experience of the use of this remedy. I have not up to this time had any experience of its properties in the case of children.

I will bring this note to an end by quoting a letter which I received from Dr. Miller, of Blackheath, referring to the use of chloral in the case of a member of a family with which I am acquainted. His words (written November 29th last), which I have his permission to quote, are as follows:—

"Mr. T—— is 82, of a very excitable, nervous temperament, very vigorous for his age in both mind and body, but afflicted with an irritable bladder and by very bad nights. This want of sleep which also exists in other members of the family, has existed for many years, but is now much aggravated by the state of the bladder; so that when excited by business or other anxiety, the night is passed in efforts at micturition every ten minutes or quarter of an hour. Every possible narcotic has been prescribed for him at various times, either without any effect, or, in the case of opium and its derivatives with the production of so much nausea and discomfort afterwards as to be practically useless. Nepenthe agreed the best, but has been taken so long by Mr. T.—— as to have no effect in inducing sleep. Bromide of potassium has failed after constant trials, even in two-scruple doses. I was glad therefore to try the effect of chloral, beginning with twenty-five grains in a little syrup and water at bedtime. This quantity given on two occasions produced considerable comfort and quiet, but did not much increase the actual sleep. Thirty grains were given after a day or two's interval, producing more sleep than he ever remembered to have had at one time. He slept very soon after taking it at 10 P.M., and awoke after about three hours, only to sleep again till about half-past 6, and felt very drowsy when rising (about 7). No

bad effects that I could observe have followed its use. The calls to empty the bladder were of course greatly diminished at night, as was also the quantity of urine; so much so as to excite some alarm in Mr. T——'s mind as to the possible effects on his constitution. The chloral was taken sometimes two or even three nights in succession, and then left off for as many; the good effects being as conspicuous as ever until last night, when, after its omission for two nights, it, without apparent cause, produced no appreciable effect either in inducing sleep or restraining the action of the bladder. The chloral has been taken now eleven times, but I fear is losing its effects unless increased.—The fresh and cheerful aspect of my patient after a dose on the previous night, as compared with his appearance after a bad night, was most striking. No loss of appetite or constipation ever ensued.

"I trust you will excuse this imperfect account of my very limited experience of what appears to be a very valuable drug."

I have not since heard whether the chloral was continued further in this case.[1]

[1] Since writing the above, I have received the following note from Dr Tuke:—

"I ordered it for a gentleman long the subject of acute melancholia, who never could sleep without morphia, and in whose case three grains of morphia failed to procure more than three or four hours' sleep. The exhibition of twenty-five grains of the chloral hydrate induced in this case profound sleep for nine hours, but on awaking his family were much alarmed at the state of collapse he appeared to be in; his medical man was sent for, and I saw him later. I found him then recovered. He has since taken fifteen grains nightly, with the result of becoming quite well. The class of case I have used it in has been restless mania, and especially in puerperal cases I know of no sedative so safe or so certain in proper doses. I find the tolerance of it very different in different cases, but twenty grains are quite enough for the first dose. I saw in a case of acute mania, last week, twenty grains produce eleven hours' sleep."

CONTRIBUTIONS TO THE PATHOLOGY AND THERAPEUTICS OF DIABETES.

BY A DUPRÉ, PH.D.

Lecturer on Chemistry at Westminster Hospital.

ACCORDING to the theory, most generally received, diabetes is caused mainly by a want of oxidizing power in the blood, the disease being intensified, perhaps, by an increased production of sugar or glycogenic substance in the liver. This sugar constantly thrown into the circulation, instead of being oxidized as in health, accumulates, it is supposed, in the blood, and is discharged through the kidneys, these organs simply removing the sugar contained ready formed in the blood.

With a view of testing, if possible, the correctness of this theory, I have, some time ago, taken an opportunity of carefully examining the urine of a patient suffering from diabetes: first while under a chiefly animal diet; secondly, while under the same diet with the addition of various amounts of honey. These experiments, instituted by me, seem to point out an explanation of this disease differing from that above alluded to. I therefore beg to place them before the medical profession in the hope that the view they bear on may receive some further elucidation from others.

Starting from the above theory, most medical men exclude sugar from the diet of patients suffering under diabetes, as well as farinaceous food, on the ground that such food, being simply converted into grape-sugar, is discharged as such through the kidneys, thereby materially increasing the quantity of urine and sugar excreted, and throwing an additional amount of unprofitable work on an already enfeebled constitution. Some medical men, however, recommend the administration of sugar to such

patients, and they allege that it does not materially increase the amount of sugar discharged. But as far as I am aware, the exact nature of the sugar excreted when sugar is either included in, or excluded from, an otherwise animal diet, has never been investigated.

True diabetic sugar is identical with so-called grape-sugar; it has the same elementary composition, is like it fermentable reduces cupric salts from their alkaline solution in the same definite proportion, and turns the plane of polarized light to the right to the same extent (molecular rotating power, 56). It is obvious, therefore, that if the patient be given either grape-sugar, or substances convertible into grape-sugar, it will be impossible to determine whether the sugar found in the urine is directly derived from the substances given, or whether it comes from a totally different source. In order, however, to decide the question—Is diabetes caused by a want of oxidizing power of the blood or not?—it would obviously be of great importance to be able to settle this point.

For such a purpose we should require a sugar closely allied to grape-sugar in general character, and yet readily distinguishable from it. Such a sugar should be traceable after its administration in the urine of the patient, supposing the blood to have lost its oxidizing power.

Fruit-sugar, in great measure, fulfils these conditions; it is identical in composition with grape-sugar, is not convertible into it, is closely allied to it chemically, is certainly not more readily destroyed by oxidation or fermentation, while both reduce cupric salts in exactly the same proportion. *However, fruit-sugar turns the plane of polarized light to the left about twice as much as grape-sugar turns it to the right* (molecular rotating power, 106).

A given quantity of a mixture of these two sugars, when estimated, as usual, by the amount of cupric salt reduced, will thus yield the same quantitative result, whatever be the proportion in which the two sugars are mixed; the optical test, however, will give a different result for every different mixture. Thus a solution containing 4 per cent. of grape-sugar and 2 per cent. of fruit-sugar will show 6 per cent. of sugar by the copper test, while the optical test will indicate little or no

sugar. The 2 per cent. fruit-sugar turning about as much to the left as the 4 per cent. grape-sugar to the right, the effects neutralize each other. Or again, 5 per cent. grape-sugar and 1 per cent. fruit-sugar will also yield 6 per cent. sugar to the copper test, while to the optical test it will exhibit an effect equal to 3 per cent. grape-sugar only; in other words, the presence of 1 part of fruit-sugar in such a mixture will neutralize the optical effect of about 2 parts of grape-sugar, and thus the amount of sugar as found by the copper test will exceed the amount found by the optical test (assuming the sugar under examination to be pure grape-sugar) by abou three times the quantity of fruit-sugar present.

With these facts present in my mind, I have, by experimenting with solutions of grape-sugar (employing Fehling's copper solution for the chemical testing, and Prof. Jellet's beautiful instrument for the optical examination, and taking in each case the mean of several carefully conducted experiments), convinced myself that the results obtained by both methods will agree with each other to within $\frac{1}{400}$ or less of the amount of sugar present, provided the solution tested contains 5 per cent. and upwards of sugar. Now, as before explained, an admixture of $\frac{1}{1000}$ part of fruit-sugar to 1 part of grape-sugar would cause an apparent difference of $\frac{3}{1000}$, or nearly $\frac{1}{300}$ part between the optical and chemical test in favour of the latter. Even this difference is already greater than the above given experimental error (viz. $\frac{1}{400}$), and any greater addition than this would, therefore, certainly be detected. We have thus a means, by combining the optical and chemical methods of testing to recognize with certainty the admixture of even a very small proportion of fruit-sugar to grape-sugar.

The patient, a man aged 59, the examination of whose urine is recorded in the following experiments, had been admitted into the hospital on February 4th, while suffering from diabetes. He at first passed a very large quantity of urine (13 to 14 pints) of high specific gravity, but after having been put upon a diet consisting of 8 ozs. of meat, 2 eggs, $\frac{1}{2}$ lb. of gluten bread and greens, sugar and farinaceous food being carefully excluded, the amount as well as the specific gravity of the urine had considerably diminished.

On Thursday, March the 5th, at noon I began the collection of urine for my experiments. The urine was always collected from noon one day to noon the next, the date given being that of the second day. During the time when the patient was taking sugar (his diet remaining otherwise unchanged) it was of course so arranged that he should take his prescribed quantity of sugar within the twenty-four hours during which the urine was collected. The experiments embrace, firstly, two days on which, and during at least four weeks previously, the patient had taken no sugar whatever; secondly, five days during which he took in all 32 ozs. of honey; and thirdly, two more days on which no sugar was taken.

The source of the fruit-sugar was honey, which, according to analysis, consisted of—

Fruit-sugar	28	per cent.
Grape-sugar	44	"
Water, &c.	28	"
	100	

The examination of the urine itself was conducted as follows. The total quantity passed in the twenty-four hours was measured and thoroughly mixed. 100 cc. of it were then measured into a flask, 20 cc. acetate of lead (one part of acetate in ten of water) added, and the mixture made up to exactly 200 cc. After standing some time the mixture was filtered, the filtrate shaken up with a little animal charcoal and again filtered, when a perfectly colourless and bright filtrate was obtained.[1] In this filtrate the sugar was estimated by means of Jellet's saccharometer, on the assumption of its being pure grape-sugar. Next, 20 cc. of the same filtrate were made up, with distilled water, to 300 cc., and in this diluted solution the sugar was estimated by Fehling's copper test. If then the percentage of sugar found by the optical test is multiplied by 2, and that found by the copper test by 30, the percentage of sugar present in the urine is obtained; from which, and the total quantity of urine passed, the amount of sugar discharged

1 Previous experiments had shown me that neither the acetate of lead nor the animal charcoal, employed as above, remove any appreciable amount of fruit or grape-sugar from a solution.

in the twenty-four hours can be calculated. Both processes will give the same result (within the above given limits of error) if the sugar present be only grape-sugar; the presence of even a small quantity of fruit-sugar will, as before described, produce a difference in the two results, the optical test showing less sugar than the chemical test.

During the last three days of the experiment the total amount of urea discharged in the twenty-four hours was also estimated. The analytical results are arranged in the following table:

Date.	The Honey taken in 24 hours contained grms. of		Urine passed in 24 hours.	Percentages of Grape-Sugar estimated		Total quantity of Sugar in grms. excreted daily according to		Total amount of Urea in grms.
	Grape-Sugar.	Fruit-Sugar.		Chemically.	Optically.	Chemical Test.	Optical Test.	
March			Cubcent.					
6	—	—	4,260	7·018	7·011	298·96	298·66	—
7	—	—	4,260	7·500	7·495	319·50	319·28	—
9	48·90	32·49	4,514	7·590	7·597	344·89	345·21	—
10	48·90	32·49	4,260	7·500	7·495	319·50	319·28	—
11	97·82	64·98	4,260	8·106	8·094	345·31	344·80	—
12	97·82	64·98	5,680	7·791	7·790	442·53	442·47	—
13	97·82	64·98	5,396	8·330	8·340	449·48	450·03	23·76
14	—	—	6,250	8·049	8·055	503·06	503·44	50·60
16	—	—	4,260	7·839	7·845	333·94	334·19	38·76

An examination of the foregoing table will show that in every case the chemical and optical tests give, practically, the same results, and consequently no appreciable amount of fruit-sugar was excreted on any one of these days. If on the 11th, 12th, or 13th, as little as 1 per cent. of the amount of fruit-sugar taken (viz. 0·6498 grm.) had found its way into the urine, it would have occasioned a difference of nearly 2 grms. between the total amounts of sugar found by the chemical and optical tests; an amount which a simple inspection of the table, for those days on which no honey at all was taken, will show to be considerably greater than the experimental errors. We may therefore safely conclude that less than this proportion was excreted, and so far the blood would not seem to have lost its oxidizing power for sugar.

The table further shows that the amount of sugar taken on the 9th and 10th (4 ozs. of honey) occasioned no material

increase either in the persentage or in the total amount of sugar excreted. On the other hand, double this quantity (8 ozs. of honey) taken on the 11th, 12th, and 13th, considerably raised the percentage as well as the total amount. Indeed, on March the 12th and 13th the increase exceeds in amount the total quantity of grape-sugar consumed; and on March the 14th, when no honey had been taken, the quantity of sugar excreted is even higher. This increase can therefore certainly not be derived solely from the sugar taken, and may perhaps be accounted for by the greater amount of liquid drunk by the patient (on account of the thirst produced by his eating the honey), which considerably increased the quantity of urine discharged, and produced a corresponding augmentation of the sugar.

Lastly, it will be observed that on March the 13th the total amount of urea was only 23·76 grms., whilst on March the 14th, the first day after the cessation of the honey diet, it suddenly increased to 50·6 grms., sinking to 38·76 grms., on the 16th. This latter amount is somewhat in excess of the normal quantity, agreeing with the generally observed fact that the urea excreted by diabetic patients is in excess of the normal amount; the amount observed on the 13th is, however, in striking contrast with it, being considerably below even the normal amount.

Should future experiments confirm this remarkable effect of a honey diet, it will not be easy to reconcile it with the current ideas regarding the malady. For, why should the 163 grms., sugar, taken in the honey, reduce the urea to considerable below the normal amount, while the upwards of 300 grms., sugar supposed to have passed through the blood in the same space of time left it above? Does not this observation also point to the conclusion that the sugar found in the urine has not previously existed, ready formed, in the blood, but has been formed only in its passage through the kidneys? Moreover, if the urea really represents tissue waste, would not a confirmation of this fact show the correctness of the practice of some physicians of giving sugar to diabetic patients?

The remarkable reduction in the amount of urea discharged when large quantities of sugar are consumed has previously

been shown by F. Hoppe (Arch. f. Path. Anat. x. pp. 144-169), in the case of dogs fed either with meat and sugar, or with sugar alone. I have myself observed that in healthy persons, taking ordinary mixed diet, the exclusion of sugar from such diet, leaving it otherwise unaltered, perceptibly increases the amount of urea.

It also appears to me that in the received theory sufficient regard has not been paid to the fact that the percentage of sugar found in the blood of diabetic patients is always extremely small (according to Leumann, never more than 0·047 per cent., and, in one case I had an opportunity of examining, certainly less than 0·04 per cent.), and yet the quantity of blood passing through the kidneys in twenty-four hours must, if this theory be correct contain considerably more sugar than is found in the urine discharged during twenty-four hours, since it would be an extravagant assumption to suppose that all the sugar contained in the blood is removed during its rapid passage through the kidneys. The sugar actually found in the blood and other fluids and tissues of the body might be perfectly explained as due to simple absorption from the kidneys, or even bladder, since it has been shown by Dr. Bence Jones and myself how rapidly substances are diffused throughout the entire body, in whatever manner they may be brought into the circulation.

However, I must leave such considerations to those better acquainted with the entire aspect of this disease than myself, and only hope that the experiments here recorded make out a case sufficiently strong to induce others to reconsider the current theory, and perhaps repeat and extend these experiments, as I have myself no opportunity to continue them.

ON THE USE OF THE BROMIDES OF POTASSIUM AND AMMONIUM IN CASES OF CONTINUED FEVER COMPLICATED WITH SLEEPLESSNESS, CONVULSIONS, AND OTHER CEREBRO-SPINAL SYMPTOMS.[1]

BY WILLIAM MOORE, M.D.

University of Dublin; King's Professor of the Practice of Medicine in the School of Physics in Ireland; Physician to Sir P. Dun's Hospital, &c.

During my recent period of duty at Sir P. Dun's Hospital twenty-one cases of continued fever (exclusive of measles, scarlatina, and acute rheumatism) came under my care. Of these twenty-one cases five were typhus, of which one proved fatal; the remaining sixteen were enteric.

The first case I shall detail, which was carefully reported by Mr. William R. White, was that of Mr. C——, who was admitted into the pay ward on the 4th November, 1869, with well-marked typhus (about seven days in fever). He had great agitation and subsultus when spoken to or touched; he was very delirious; his eyes were red and suffused, the pupils small. He was ordered eight ounces of wine with beef-tea.

On the 5th he was in a very excited state, having slept none the night before; he was constantly trying to get out of bed.

On the 6th he was very delirious and restless, and succeeded in getting out of bed, and running about the ward. He had slept none during the night. The wine was increased to twelve ounces.

On the 7th he was much in the same state as the day previous; had slept none, the agitans and hyperæsthesia was very great. He was ordered a drachm of the tincture of hyoscyamus in camphor mixture at bedtime.

[1] Read at a meeting of the Medical Society, College of Physicians.

On the 8th he did not seem to know any one, and kept picking the bedclothes. The hyoscyamus seemed to have quieted him somewhat during the night, although he did not sleep. Same stimulants continued, and to get fifteen grains of the bromide of potassium at bedtime.

On the 9th the patient slept several hours at intervals during the night, and was conscious; the floccitatio had disappeared; the agitation and injected state of the eyes were much less; he did not remember a single incident since his admission. From this date his convalescence was established, and he left the hospital on the 20th of November.

Case II., which was reported by Mr. Richard Lloyd, resident medical scholar, was that of Mrs. Elizabeth C——, aged 30, housekeeper, who was admitted into Sir P. Dun's Hospital on the 13th November, 1869, labouring under typhus fever of about eight days' duration.

On the 14th she was dusky and maculated; the eyes were "ferrety;" the teeth and lips covered with sordes. She was restless, sleepless, and very delirious, with floccitatio, and involuntary passing of fæces and wind; altogether a most unpromising case.—She was ordered a table-spoonful of whisky in water every hour, and beef-tea, the head to be sponged, and fifteen grains of the bromide of potassium in an ounce of camphor mixture to be given at bedtime.

On the 15th there was no improvement in her condition; the whisky was increased to a table-spoonful every half-hour, and the bromide of potassium was given at bedtime.

On the 16th she had some sleep during the night, and was holding her ground. The same treatment was continued, with the bromide of potassium at bedtime.

On the 17th had a quiet night, some sleep; still passing under her, but in other respects improved. Bromide of potassium to be repeated at bedtime.

On the 18th the patient was quite conscious; she slept several hours during the night. From this date the stimulants were diminished, and the bromide of potassium was omitted, and she left the hospital, after a tardy convalescence, on the 19th December.

Case III., reported by Mr. W. R. White, was that of James

T——, plumber, aged 27, who was admitted into Sir P. Dun's Hospital on the 16th December last with well marked typhus.

On the 17th he was delirious, and had slept none; the eyes were injected, the pupils contracted; his pulse was 120, his temperature 104°, and his respiration 30. He was ordered 12 ounces of wine during the twenty-four hours, and beef-tea, and to get 20 grains of the bromide of ammonium in camphor mixture at bedtime.

On the 18th he was not quite so delirious; same treatment, with the bromide of ammonium at bedtime. The bromide of ammonium was repeated on four consecutive nights; the patient had a good recovery, and he left the hospital on the 7th of January last.

Case IV.—This case exemplifies a complication which by all authorities on fever is admitted to be the most alarming—viz., the presence of convulsions.

The patient was admitted with all the symptoms of well-marked enteric fever. He had the rose-coloured spots, cæcal gurgling, with tympany and diarrhœa; when comparatively late in the fever, convulsions and other cerebro-spinal symptoms manifested themselves.

The details of this case, which was carefully watched and reported by Mr. Reuben Harvey, resident medical scholar, are as follows:—

Peter O'C——, aged 18, a compositor in the office of the *Evening Post*, was admitted into Sir P. Dun's Hospital on the morning of the 14th December last, with all the symptoms of enteric fever, and as far as we could learn he was about eleven days in fever. He had been a healthy young man, with no tendency to epilepsy or nervous disease of any kind. On admission his pupils were dilated, the eyes were clear, he was tender on pressure over the ilio-cæcal region, slightly tympanitic, and had diarrhœa; numerous rose spots were visible over the abdomen and chest, and his temperature was 103·6; pulse 116, respiration 20. He was rather inclined to sleep, and for several days seemed to be getting on favourably, and the diarrhœa ceased; getting eight ounces of wine.

On Saturday the 18th the bowels were twice moved, but he presented no other symptoms calculated to cause any special

anxiety. On Saturday night, about half-past ten o'clock, Mr. Harvey noticed the patient lying on his back, low down in the bed, with his arms folded over his chest; his breathing was rapid and irregular, a circumstance which Mr. Harvey had noticed during the afternoon, and had found no chest complication to account for it. When spoken to he made no reply, nor did he stir, but when turned on his side spoke a few words and swallowed some whisky in milk. A blister was applied to the nape of the neck, About three o'clock on Sunday morning he was unable to swallow, and his respiration was still more hurried, and there was great restlessness and subsultus, with nasal stertor, injected eyes, and somewhat contracted pupils. He moved his eyes with great rapidity, and would swallow nothing, and lay with his head retracted. The head was now shaved, and a blister was applied over the vertex, to all which appliances he seemed insensible. His feet and hands were hot. He remained in this unconscious state till 10 A.M. on Sunday, when he opened his eyes and took some drink. He now regained his consciousness so far as to speak to the nurse and a friend; still he passed everything involuntarily; it was impossible to obtain a sample of urine for examination. The blister over the vertex was dressed with mercurial ointment. Wine increased to twelve ounces, with four ounces of whisky. At 6 P.M. on Sunday he suddenly relapsed into the same unconscious state, with well-marked opisthotonos. He now had twenty grains of bromide of ammonium, which was got down with great difficulty, and he passed a better night.

On Monday morning he had a series of convulsions, which lasted over several hours; these were attended with involuntary passing of fæces and urine. On this night (Monday) the twenty grains of the bromide of ammonium was repeated, and on Tuesday night, during both of which days he had occasional intervals of consciousness.

On Wednesday the fits returned, and at 11 A.M. and at 4 P.M. he had twenty grains of the bromide of ammonium, and that night got some sleep. On Thursday he again relapsed, and could not answer any questions, but was able to swallow. Twenty grains of the bromide of ammonium was now given three times a day. On Friday the same treatment was con-

tinued; he made an effort to answer questions, but still passed his urine under him. A small quantity of urine was with difficulty obtained; its specific gravity was 1·021, and it contained no albumen. The patient slept the greater part of Friday night, and on Saturday he could answer any questions he was asked; took greedily what was given to him, and ceased to pass under him. On Sunday the cerebro-spinal symptoms disappeared, the bromide was discontinued, and he had a favourable and comparatively speedy convalescence.

The maximum temperature in this case was 103·7; pulse, 120; respiration, 48.

A PROGNOSTIC AND THERAPEUTIC INDICATION IN EPILEPSY.

BY QUÆRENS.

"Oft o'er my brain does that strange fancy roll,
Which makes the present (while the flush doth last)
Seem a mere semblance of some unknown past,
Mixed with such feelings as perplex the soul
Self-questioned in her sleep; and some have said
We lived, ere yet this robe of flesh we wore."—COLERIDGE.

"Moreover, something is or seems
That touches me with mystic gleams
Like glimpses of forgotten dreams—

Of something felt, like something here;
Of something done, I know not where;
Such as no language may declare."—TENNYSON.

"We have all some experience of a feeling which comes over us occasionally, of what we are saying and doing having been said or done before, in a remote time—of our having been surrounded, dim ages ago, by the same faces, objects, and circumstances—of our knowing perfectly what will be said next, as if we suddenly remembered it!"—*David Copperfield.*

LAST year I had the misfortune to become, for the first time in my life, subject to occasional epilepsy. I well remember that the sensation above described, with which I had been familiar from boyhood, had, shortly before my first seizure at a time of over-work, become more intense and more frequent than usual. Since my first attack, I have had only few recurrences of the feeling in question. On two occasions, however, it was followed next day by an epileptic seizure, and I have since treated its occurrence as an indication for immediate rest and treatment.

There seems to me a twofold therapeutic interest in this experience. First that, whatever pretty suggestions Coleridge and

Tennyson may make to account for it, and however universal its occurrence may be regarded by Dickens, it probably ought to be regarded as showing disturbance of brain-function; and that, perhaps, its recognition and removal might sometimes prevent the development of a more important disorder. Secondly, that inquiry in cases of epilepsy may detect a something of this sort, put aside as not being of sufficient consequence to speak of; and yet in truth being a minimised form of *petit mal*, warning to precautions against a larger seizure.

ON THE DIETETIC AND MEDICINAL USES OF WINES.

BY THE EDITOR AND STAFF.

PART I. ON THE PLACE OF WINES IN THE DIET OF ORDINARY LIFE.

(*Continued from* p. 224.)

It was shown in our last paper, that there is a great tendency in the customs of modern middle and upper class society to introduce modes of wine drinking which would easily involve people in habits of alcoholic excess, though such an idea might be far enough from their wishes or intentions.

It is very obvious that the multiplication of alcoholic drinks, with different flavours, each tempting in its turn, must lead the sharer in convivial feasts to forget how much he has already drunk; more especially if (as is usually the case) he has no accurate knowledge of the alcoholic strength of the liquors which he takes. And even in every-day life, it cannot be easy for those who adopt the common plan of drinking at least two, and generally three, separate alcoholic liquors in the course of the day, to regulate their allowance of alcohol with anything like nicety. It is therefore much to be desired that people may be educated in the direction of using only one alcoholic drink; at least for every-day consumption. The choice of this one drink must in each individual case depend upon a number of other considerations besides mere alcoholic strength, and these will be discussed further on; at present we have to point out those drinks which are suitable, in the single matter of strength, to be selected as the only alcoholic beverage.

What we have practically to consider is the possibility of selecting some alcoholic fluid which shall be weak enough—either when taken neat, or with only so much water as will not

make it distasteful—to enable us to drink so much of it as will satisfy all needs for fluid at lunch and dinner (or dinner and supper with folk of early habits), without producing any of the injurious effects of alcohol. Weak beers would, of course, very well fulfil these requirements; for instance, a sound light table-beer, containing about 3 per cent. of absolute alcohol. But to a large number of persons the quantity of such beer that would satisfy thirst, and also prove sufficiently stimulant, would not be readily digestible; or, if it did not disorder primary digestion, would cause disagreeable after-consequences. Especially to persons of a gouty constitution, such a regimen would be most unwholesome; also to many persons with rheumatic tendencies, on account of the sugar and dextrine which some light beers contain. Beers, again, cannot be mixed with water and retain their agreeable flavor.

It is amongst the class of natural wines, averaging not more than 10 per cent. of absolute alcohol, that we must seek the type of a universal alcoholic beverage for every-day life. If we turn to the most recent analyses (the very careful work of Dr. A. Dupré, of the Westminster Hospital), we find two kinds of wine which, as far as alcoholic strength is concerned, meet the ideal want—viz., a Rhine wine at $9\frac{1}{2}$ per cent. alcohol, and a claret at $8\frac{1}{2}$ per cent. Such wines are easily procurable, and we may say that we have, in either of them, a beverage which, alone or diluted with a certain amount of water, would at once satisfy all needs for liquid with the principal meals, and all needs for alcohol in the most convenient and agreeable way. A bottle a day of either of these wines for an actively employed adult, and a proportionately less quantity for those whose life is more sedentary, would very well represent the allowance of alcohol which may be said to suit the best standard of ordinary health. Unfortunately, however, for persons of moderate means, the German wines, in the present state of prices, are practically out of the field as *beverages*. It is quite possible (*experto crede*) to procure in London an admirably sound ordinary Bordeaux for 12*s.* a dozen (alcoholic strength 8 to 9 per cent.); but a German wine of anything like equal merit would cost twice as much. The same may be said respecting Hungarian, Burgundian, and Greek wines, besides other objections to be noticed hereafter.

Practically, then, those who wish to adopt the plan of drinking all their alcohol in the shape of one wine, will probably do best with Bordeaux, which is also, *par excellence*, the wine which may be mixed with water (of course we speak of the humbler growths) without spoiling. We maintain that for the hard-working student, politician, professional man, or busy merchant, there is no better arrangement possible than that of taking, as the regular daily allowance, a bottle of sound ordinary wine of Bordeaux: and that the number of persons with whom such a diet really disagrees is very limited; but on the latter point we shall have more to say hereafter, in discussing the other ingredients of wines.—It may be added that no other wines which the world produces are capable of yielding, day after day, such unwearied pleasure to the palate, as the sound ordinary wines of Bordeaux and of the Rhine.

While, however, we vindicate, for the light natural wines, the position of the best common alcoholic drink for healthy adults, we have some remarks to make on certain more limited and occasional uses of wines, which embody ideas not commonly received by the profession. We refer to the employment of the stronger wines, such as port, sherry, madeira, or marsala, all of which are fortified by the addition of alcohol over and above that produced by their own fermentation.

It is a common idea that the stronger wines are particularly suited to healthy adult life, and especially to middle age; but we believe that this is a complete mistake. The vigorous frame and perfect digestion of a healthy young or middle-aged person requires but a moderate daily allowance of alcohol to assist functional activity; and as, nevertheless, the temptation to free indulgence in the pleasures of the table is most influential in the middle period of life, it is of the greatest consequence that the alcohol should be taken in the most diluted forms: and we may add that this is especially necessary for persons (particularly women) who possess a nervous temperament, and are, therefore, highly sensitive to strong and pleasing impressions on the nervous system. It is otherwise with the two extremes of life—infancy and old age; in both these periods there are tendencies to a variety of afflictions which scarcely appear to deserve the name of positive disease, but which demand serious modifications of

the diet; these conditions may, we affirm, be far more advantageously treated by the administration of the *stronger wines* than by any other means whatever. We shall defer the full consideration of this subject till we come to speak of the ethereal constituents of wine, which count for at least an equal, if not a greater, value than that of the alcohol in this particular use of the stronger wines, more especially of sherry.

2. Sugar is the next ingredient of wines which we have to consider in the selection of appropriate beverages for persons in ordinary health; and here we get a forcible illustration of the maxim laid down in a former paper, that "health" is not a constant and uniform thing, capable of being separated by a sharp line from "disease:" for there are the greatest possible differences between the respective capabilities of different persons, equally healthy in appearance, to digest saccharine wines.

The respective proportions in which the various classes of wines contain sugar cannot, of course, be stated in a summary manner, sugar being precisely the most varying element. Given a wine made from a certain grape, and under certain climatic conditions, then, of course, the amount of sugar which it actually contains when drunk will depend, (1) on the degree of completeness to which fermentation was allowed to proceed in the wine-making; and (2) on the age of the wine.—Taking the matter broadly, it may be said that the natural wines are the non-saccharine, and the fortified wines are the saccharine; though there are important exceptions to this which must be specially mentioned. Here are the results of Dr. Dupré's analyses of four clarets (red Bordeaux), of the respective prices of 12*s.*, 15*s.*, 30*s.*, and 66*s.* per doz.: the first contained 13·56 grains of sugar in the bottle, the second 51·62 grains, the third 18·48 grains, and the fourth (an old bottled wine) 11·40 grains. Contrast with this the same chemist's analyses of four sherries, prices respectively 22*s.*, 36*s.*, "high" and "high," the two last being wines of good vintage, and some years in bottle: the quantities of sugar are, 307·8 grains, 217·2 grains, 356·4 grains, and 421·2 grains per bottle, respectively. Take also the analyses of four ports (vintages 1864, 1851, 1851, and 1842): the quantities of sugar per bottle are 519·72 grains, 460·80 grains, 190·20 grains, and 121·20 grains. Two samples of marsala (old and good) con-

tained 388·8 and 451·2 grains of sugar per bottle, respectively.—The natural wines of the Rhine, on the other hand, contain even less sugar than clarets: thus, in four samples examined by Dr. Dupré (prices 15*s*., 20*s*., 36*s*., and 72*s*. per doz.), the sugar per bottle amounted to 1·44 grains and 8·64 grains, respectively, in the two cheapest, and to a mere "trace" in the two others.—Champagne stands in a peculiar position, as it is intentionally sweetened: according to Bence Jones' analysis there are about 500 grains of sugar per bottle in such varieties as find most favour in this country (*e. g.* Moet and Chandon, *premier qualite*); but some champagnes are sweetened to a much higher pitch, while, on the contrary, some English connoisseurs demand a champagne which scarcely contains half this amount of sugar. Hungarian natural wines contain but a small amount of sugar; they stand somewhat intermediate, as regards this element, between Rhine wines and red Bordeaux.

One of the richest in sugar of all the natural wines is Bordeaux-Sauterne, a white wine of great popularity, from its fragrant bouquet and flavour. Bence Jones' analysis of a sample of a fine Sauterne (72*s*. per doz.) gives 125 grains of sugar to the bottle; and the taste of this wine, until it has been many years in bottle, is distinctly sweet, too much so, indeed, for the taste of many wine-drinkers. On the other hand, among the fortified wines we occasionally meet with sherries of extreme "dryness," containing, in fact, almost no sugar at all: such, for instance, as an amontillado (marked "very good" in Bence Jones' tables).—But such wines, *when genuine*, are too expensive for common use.

The above brief summary of the proportion of sugar in the principal varieties of wine will be sufficient for the purposes of those who merely require some guidance in the choice of an every-day beverage. It is clear that for those who wish to employ wine as a beverage, and to avoid the use of a highly saccharine liquor, the safest choice, in this respect, lies between the sound ordinary wines of Bordeaux, the Rhine, and Hungary. It now remains for us to inquire what are the facts as to the wholesomeness or unwholesomeness of saccharine wines, as such, to persons in ordinary health.

It must be remembered, in the first place, that we are not

dealing with the possible effects of *very large* quantities of sugar in wine. The "dietetic use of wines" does not practically include the employment of any wine which would contain more than one ounce to the bottle, and the facts already detailed as to alcoholic strength will show that the wines (except champagne) that contain anything like this percentage of sugar—port, sherry, madeira, marsala—cannot (on the ground of alcoholic strength) be safely taken in larger daily quantites than one-third to one-half of a bottle. The question then arises, whether—and if so in what circumstances—the ingestion of from one-third to half an ounce of sugar in their wine has a deleterious influence upon persons in what would ordinarily be called "health."

There are three classes of individuals enjoying fairly good general health respecting whom there is a certain amount of evidence that saccharine wines are apt to unfavorably influence their bodily condition. (1.) A considerable number of persons possess a marked proclivity to excessive deposit of *fat* in the cellular tissues; and a good deal of evidence has been adduced by various writers—from Brillat-Savarin to Banting—to show that the saccharine and sugar-making ingredients of food aggravate this tendency. It is not necessary, however, to dwell on this subject, as the amount of sugar introduced into the body by anything like a temperate consumption of saccharine wines would obviously be trifling as compared with the supplies furnished by ordinary food. (2.) The tendency to *gouty* affections, which is hereditary, is widely diffused among persons otherwise healthy, and a certain amount of evidence exists to show that a considerable saccharine ingredient perceptibly increases the well-known tendency of alcoholic drinks to evoke the tendency to gout, which is latent in such constitutions. Our own investigations lead us to entire concurrence with the opinion of Garrod —the greatest living authority on gout—that the saccharine element of alcoholic liquors has never yet been proved to be the *only* effective element in provoking the disease. Nevertheless, the fact that the one common feature in all those classes of drinks which really do seem convicted of a strong gout-producing tendency—malt liquors, strong wines, champagnes, and sweet cider—is their saccharine or sugar-producing quality, does suggest an almost necessary connection between saccharine beverages and

gout. Even if it be true, as Dr. Garrod maintains, that even the "driest" sherry will often appear to excite gout in a predisposed individual, we cannot believe that the saccharine element of wines has not a powerful influence in developing gouty manifestations. In truth, however, we question the accuracy of this assertion; at least we greatly doubt whether really non-saccharine sherry ever produced a *first attack* of gout; but when the tendency to the attacks has become very strong, a trifling disturbance of digestion might be sufficient to bring on a fit of gout, and even so innocent a fluid as dry sherrry might suffice for this purpose. Still, there can be no question that for persons who are born of gouty families, especially if they have themselves experienced warnings of gout, the safest course is to avoid the whole class of fortified wines, and confine themselves to sound light claret, or, in the rare cases where this disagrees, to very weak cold spirits and water, carefully bearing in mind that though, when used in moderation, alcohol itself does not appear to be a gout-producer, yet the depression of the nervous system which inevitably follows excesses, even with plain gin, is perfectly competent to induce gout in predisposed persons. (3.) Even more than to those persons who are liable to well-pronounced gout, saccharine wines are a danger for that class of dyspeptic patients who are the victims of a latent gouty disposition. In subjects of this temperament the effects of even a small indulgence in this kind of liquor are often extremely diastrous. We are acquainted with one lady whose sensitiveness in this regard makes her stomach an extraordinary delicate tester of the sweetness of wines. The least approach to high saccharine quality makes wine, to her, a poison which infallibly provokes severe vomiting or bilious diarrhœa, or both. It is a curious circumstance, however, that this particular lady only showed the tendency in question rather late in life, previously to which period she had habitually, though very moderately, taken port wine of a decidedly saccharine type; and it was soon after her first development of an incapacity to bear this wine that her first (very slight) symptoms of articular gout appeared. The same lady drinks very dry sherry with perfect impunity.

The peculiar form of dyspepsia which is found in persons of gouty habit is, however, by no means the only dyspepsia

with which the saccharine wines disagree. It is one of the commonest medical observations that a considerable number of persons can only maintain a good and active state of the digestive powers by means of a very strict limitation of their allowance of sugar, and also of the starch-containing foods, which undergo conversion into sugar at an early stage of the digestion. Such persons are obliged to be extremely moderate, for instance, in their consumption, not merely of pastry and sweets, but even of bread and potatoes, under penalty of severe dyspepsia if they transgress this rule. To such individuals the saccharine wines are commonly very unsuitable and disturbing. For some reason, not clearly apparent, in the present state of our knowledge of the chemistry of digestion, the tendency of sugar to "turn acid" on the stomach is very much heightened when that substance is given in combination with alcohol. This is the case even when it is taken with a plain spirit like gin. But the mischief is still further heightened in the case of wines, since all wines contain a considerable proportion both of fixed and volatile acids, as will be presently seen. The tendency of the sugary wines to produce sour dyspepsia is, however, altogether out of proportion to their chemical degree of acidity. For instance, such a wine as one of the ports analysed by Dr. Dupré (vintage 1864), which contain 43·31 grains per 1,000 of sugar, and only 4·13 per 1,000 of total free acids, is far more likely to be mischievous in this direction than a light natural wine like claret of good quality, which may contain as much as six grains of free acid per 1,000.

3. The natural *acidity* of wines is the next item which needs consideration in reference to their use as beverages; a more general diffusion of accurate knowledge on this subject is highly desirable, since the taste of wines, by which people ordinarily judge of their acidity, is often highly misleading. The following are the figures given by Dr. Dupré for the principal wines:— In four red Bordeaux (prices 12*s*., 15*s*., 30*s*., and 66*s*. per doz.) the total quantities of free acid were 77·40 grs., 72·96 grs., 74·28 grs., and 65·76 grs. per bottle respectively. In four samples of hock (prices 15*s*., 20*s*., 36*s*., and 72*s*. per doz.) the total free acids were, 67·44 grs., 57·60 grs., 70·32 grs., and 69·24 grs. per bottle. In three samples of Hungarian wine (prices 21*s*., 34*s*., and 42*s*. per doz.) the total free acids were, 80·16 grs., 85·92 grs., and 83·88 grs.

per bottle. In four sherries (prices 22*s*., 36*s*., "high" and "high") the total free acids were, 55·32 grs., 54·48 grs., 61·16 grs., and 58·08 grs. per bottle. In four ports (prices 32*s*., 50*s*., "high" and "high") the total free acids were, 49·56 grs., 49·56 grs., 62·16 grs., and 58·08 grs. per bottle. In two marsalas ("old" and "very old") the total free acids were 39·12 grs., and 47·76 grs. per bottle.

When we analyse further the free acid constituents of wine, we find that they are made up of three principal ingredients—malic, tartaric, and acetic acids, and a small proportion of several volatile acids closely akin to the latter, which, however, have but a trifling influence on the acidity of wines, though they are important ingredients in flavour and bouquet.

Of the three principal acids, malic and tartaric are the direct product of the grape-juice, the former preponderating; they are fixed, or non-volatile. The acetic, and other volatile acids, are the consequence of fermentation, and of the slower oxidizing processes which go on after fermentation. Supposing the total amount of free acids to range (as it does in sound wines) between 4 and 6 per 1,000, the volatile acids should not exceed one-fourth of this amount in the case of white, or one-third in that of red wines. More than this indicates that the wine is losing its vinous character and turning to vinegar.

Now as regards the acidity of wines, it need hardly be said here that a very popular prejudice in this country regards the light natural wines as essentially sour, and consequently, in that respect at least, inferior in wholesomeness to the port and sherry which are consecrated by English drinking traditions. Of course if we judge by mere taste this idea is correct; a light claret, or still more a light hock, will appear strikingly sour as compared with a sherry of fair soundness: one would judge that there was five or six times as much free acid in the light wine as there is in the stronger. In truth, however, if we turn to the analyses of Dr. Dupré, we find that a light claret of 1865, costing only 15*s*. a dozen, contains but 6·08 per thousand of total free acids, as against 5·18 per thousand in an expensive old bottled sherry of 1860 vintage; and that the proportion of acetic to total free acid is much greater in the case of the sherry than of the claret. There is, perhaps, even a more settled prejudice against hock than

against claret on the score of supposed acidity; yet if we turn again to the tables we find hock at 15*s.* per dozen, containing no more than 5·62 per thousand of free acids, of which, again, a less proportion than in the case of the sherry above mentioned is volatile acid. The explanation of the common mistake is, of course, to be found in the large quantity of sugar (29·70 per 1,000) which the sherry contains, and which *masks* the acid; and it therefore becomes an important question, whether the mere masking of an acid taste in this way really renders the wine more digestible.

For our own part we are totally opposed to such a view, and indeed are strongly inclined to believe that, as applied to wines, it is actually the reverse of the truth. We believe that in reality the maximum of injurious quality is reached when a wine of tolerably high natural acidity contains also a considerable amount of sugar. For (1) the dyspepsia, gout, and other symptoms which (putting aside *alcoholism*) are supposed to be *the special* results of indulgence in wine, are comparatively uncommon among the European nations, who habitually consume the natural acid-tasting light wines in large quantities. (2) We have personally sought in vain for any instance where the moderate use of a really non-saccharine sherry has produced gout; and we strongly suspect that those persons who have fancied that gout was provoked in them by the use of a "dry" sherry were merely judging of the quality of the liquor from its taste, and had really been drinking a sherry the composition of which resembled that mentioned above. (3) Whatever may be ultimately shown to be the true origin of the gouty and other allied forms of dyspepsia, it can scarcely be doubted that one of their most important phenomena is an iterference with the normally rapid rate of absorption of saccharine matters from the stomach, or that the presence of alcohol (especially alcohol of some strength) would increase this delay of the sugar-absorption. That under these circumstances fermentative changes, with abnormal formation of acid and irritant matters, would occur in the stomach, seems highly probable. (4) It is very difficult to believe that the trifling proportion of fixed and volatile acids present in any drinkable wine, would be sufficient to disturb digestion save in persons of exceptional sensitiveness; one has

only to remember the quantities of malic and tartaric acid which every one swallows during the fruit season, and the quantities of acetic acid which even the most modest consumer of pickles, sauces, and salads habitually takes, to perceive how extremely improbable it is that a wine containing not more than 6 per 1,000 total free acids should (from *that* cause) disturb the digestion of any moderate drinker of it.

It is needless to say that thoroughout the above remarks we are dealing with the case of wines which are fair specimens of their respective classes, and not with those which, whether from careless manufacture, or fraudulent manipulation, depart widely from the standard of sound wines. The latter is a subject to which we shall devote a separate paper when we have completed our survey of the principal normal ingredients of wines, and their several relations to the diet of ordinary life.

(*To be continued.*)

[Important papers by Professor Binz, Dr. Sturges, and Mr. Robert Hamilton are unavoidably postponed.—Ed. Practitioner.]

Reviews.

Dr. Tanner on the Diseases of Infancy and Childhood. Second Edition, revised and enlarged. By Alfred Meadows, M.D. Lond., M.R.C.P., &c.

This much enlarged and improved edition of Dr. Tanner's useful manual of children's diseases will be very acceptable to the profession. So long a time has elapsed since the publication of its predecessor, that Dr. Meadows has had no less a task to perform than the complete recasting of the work. A signal example of the great progress which our knowledge of infantile diseases has made, and of the corresponding necessity for remodelling treatises which are but a few years old, is afforded by the chapter in which Dr. Meadows has dealt with the subject of rickets: this is altogether an addition, if our memory serves us right; and it is a sufficiently startling reminder of how recent is all that accurate knowledge of the realistic diathesis which the labours of Sir W. Jenner, M. Guérin, and others have now secured to the profession.

The subject of rickets is, however, only one branch of the great question of diathetic affections, which it is fair to say that Dr. Meadows has for several years treated, in his previous writings, from a point of view which is exceedingly important in regard to those practical questions of treatment with which the readers of this journal are chiefly concerned. The following will show the general tendency of his opinion:—"It is probably not an exaggeration to say that nine-tenths of the children we are called upon to treat, exhibit, in some form or other, unmistakeable evidence of diathetic taint, and it is, moreover, certain that these diatheses give a character to all other diseases, influencing their pathological tendencies, controlling and modifying the symptoms, requiring much vigilant watching, and necessitating distinct recognition in their management and treatment." The corollary to this is, that the physician who treats children should be, in a far greater number of cases than is generally understood, really concerned very little with the external form that is taken by intercurrent disease, and very much with the intrinsic strength and condition of the organism; and that it is especially important for him to neglect acute *symptoms*, if necessary, in order

that he may not for a moment neglect the duty of supporting the general strength.

Now, whether we approve or disapprove of the exact terms in which Dr. Meadows formulates this opinion, it represents, in our judgment, an important and central fact in pædiatria. We object to, or at least we hesitate about the use of, the word "diathesis;" having, we confess, very probably no better reason for so doing, than the prejudice raised against the word by the preposterous abuse of it of which French writers (especially dermatologists) have been guilty. But at any rate we cannot for a moment doubt that in the treatment of children's acute diseases the overwhelmingly important consideration, both with reference to present recovery and the avoidance of disastrous sequelæ, is *nutrition;* and that there are reasons for this which are altogether peculiar to the case of children. We may explain what we mean by quoting the words of one of the most acute and experienced of living physicians, who was conversing with us recently on the future of pædiatria. "The fact," said he, "which men ought constantly to keep before their eyes in treating children's diseases, but which in practice they constantly ignore, is that the very organs which are the subject of momentary changes which attract the attention of friends, and cause the physician to be summoned, are at the very same time in process of *growth and development.*" And Dr. Meadows is, we believe, unquestionably right when he points out, that acute disease falling upon the young and growing organs, even if it does not find an unhappy hereditary predisposition to structural degeneration, does very often so far spoil the organ as to make it incapable, afterwards, of carrying the double work of *growth in size and perfection of tissue repair.*— And whatever may be the plausibility of some of the objections which have been urged to the practice of universal feeding in the acute diseases of adults, we maintain that these objections cannot possibly be maintained in the case of children; and we entirely concur in the feelings of surprise and almost indignation with which it is evident that Dr. Meadows regards those authors who think it a trivial thing to omit nutritive support, and to inflict depressing remedies, in the phlegmasiæ and fevers of childhood.

We have no space for reviewing this work at length, nor is it necessary. It is of a thoroughly practical character; and to the medical man engaged in active practice among all classes of patients, it will be found very useful. One of the special features which entitle it to praise on this ground is the copious list of formulas. Dr Tanner's books have always been distinguished by attention to this matter; but in the present case Dr. Meadows has very much extended and enriched the collection: we may especially mention the care and accuracy with which he

has drawn out prescriptions of the proper doses of narcotics at various ages, a point in which there is an extraordinary and unaccountable carelessness of statement in the majority of practical works. We wish this volume success, which it merits not only by the intrinsic excellence of its contents, but by its elegant and readable style of printing, and its not too excessive bulk.

[A great number of reviews are postponed from lack of space.—Ed. Practitioner.]

Clinic of the Month.

Treatment of Psoriasis by Carbolic Acid.—Dr. McNab recommends this mode of treatment, stating that he began by applying it in a case of inveterate psoriasis that had resisted all the ordinary plans of treatment, and found that after continuing the treatment for some time the scales began to fall off, the process of desquamation was retarded, and the skin began to assume a healthier aspect. At this stage of the process the carbolic acid application was discontinued, and the oxide of zinc ointment substituted for a short time, which was followed by the cure of the disease. He considers the best mode of application of the acid to be in the form of ointment, which should consist of one part by weight of the acid to four of common lard, melted down and mixed, and afterwards allowed to cool. It ought to be applied every night at bedtime, with gutta-percha tissue covering to prevent evaporation, and this should be continued until the scales disappear and the skin begins to assume a smoother and healthier aspect. The oxide of zinc ointment is now to be substituted until the cure is effected. The utility of applying the oxide of zinc afterwards depends solely on its astringent effects, and keeping the parts moist, and excluding the atmospheric air. The local should of course be combined with appropriate general treatment. (See *Lancet*, March 19, 1870.)

Treatment of perforating Ulcer of the Stomach and Hæmatemesis.—In a clinical lecture on these subjects Dr. George Johnson remarks that in the treatment of hœmorrhage absolute rest in bed is essential; no food should be introduced into the stomach, but the patient should be sustained by nutritive enemata. The bleeding patient should lie still, sip iced water, and be fed by the rectum. The most useful styptics in these cases are tannic acid in ten grain doses, tincture of perchloride of iron in twenty-minim doses, or oil of turpentine in twenty-minim doses. When the bleeding has ceased liquid food may gradually and cautiously be given by the stomach; then solids; and, lastly, iron is a most valuable restorative tonic, In the treatment of perforation of the stomach the necessity for keeping the stomach free not only from food, but from medicine, is absolute. This accident is generally fatal, but there are on

record a few cases in which a patient has recovered after symptoms of perforation had occurred, and Dr. Johnson adds one to the number. (See *British Medical Journal*, March 26, 1870.)

Treatment of Otitis media purulenta.—Dr. v. Millingen observes that this is one of the most painful and obstinate diseases of the ear, and is alike uncertain in prognosis and difficult to cure. The object to be attained is the healing of the diseased mucous membrane. Forcing air into the tympanum through a catheter is by no means sufficient to remove a mass of thick secretion accumulated in and adherent to the sides of the tympanic cavity. Syringing the external meatus does very little good, as only the pus lying in the external meatus is removed; or if there be a perforation in the tympanic membrane, only a small quantity of that which is contained in the tympanic cavity. The Eustachian tube, generally the starting-point of the disease, is also affected. If the mouth of the tube be examined, it will be found to be in most cases inflamed, if not ulcerated, and it is to be inferred that the whole mucous membrane of the ear, beginning from the membrana tympani to the mouth of the Eustachian, is covered with purulent secretion. The idea suggested itself to Dr. Millingen to try a new mode of treatment which has been adopted in the clinique of Dr. Pollitzer, of Vienna, with the most favourable results. It consists in catheterizing the patient, and after having insured the passage of air into the tympanic cavity, by means of the otoscope, to syringe tepid water several times successively through the tube into the cavity with sufficient force to bring out all the pus that may be there contained; the second step is to blow in air again, in order to drive away any water which may have remained in the tympanum; and, lastly, whenever the case requires it, to blow in through the same catheter a few drops of some astringent solution. (See *Medical Times and Gazette*, March 26, 1870.)

Chloral in Insanity.—Dr. Tuke states that, being desirous of ascertaining what influence the hydrate of chloral might have in the treatment of insanity, he instituted a limited series of experiments on certain patients recently admitted into the Fife and Kinross District Lunatic Asylum, and also on some old-standing chronic cases. These were successively a case of chronic alcoholism, characterized by acute mania; two cases of asthenic insanity, symptomized by melancholy; and lastly, a case of climacteric insanity, characterized by melancholy. The advantages of the drug over all other hypnotics he considers to be that it is more uniform in its action; that it has no depressing influence; that it does not cause constipation; that it does not produce nausea, and that its effects are more lasting. (See *Lancet*, March 26, 1870.)

Quinovate of Lime.—Messrs. Hodgkinson and Co., of Tenter Street, E.C., have prepared this salt from Peruvian bark. The new salt is said to possess valuable tonic properties, and to have been used by several German physicians with marked success. The dose is from two to eight grains frequently administered in the form of powder, or in a mixture. (See *British Medical Journal*, March 26, 1870.)

Operations for Removal of Epithelial Cancer of the Tongue.—Three cases are recorded in the *Lancet* of this operation. In one of these, operated on by Sir William Fergusson, the organ was seized with toothed forceps, drawn well forward, and removed with one sweep of the knife; profuse arterial hæmorrhage followed the operation, most of which quickly ceased, only one vessel requiring ligature. In the second Mr. Hilton first isolated the tumour by passing three needles under its base through the healthy tissue. Beneath these pins was fixed a loop of platinum wire in connection with an *écraseur*; junction was next made between the loop of wire and a powerful galvanic battery, and by screwing the *écraseur* the growth was removed from the tongue. In the third case, by Mr. Erichsen, a T-shaped incision was made under the chin, the first cut being made from the lower edge of the jaw, along the mesial line, to the hyoid bone, and the incisions on either side along the inferior margin of the lower maxillary bone. Two flaps formed of skin and subjacent muscular tissue were dissected out and turned back, and the insertions of the hyoid and lingual muscles to the lower jaw divided, the tongue dragged forwards through the large submental opening, and removed with the *écraseur*. From the clinical remarks made on these cases it would appear that an immediate and rapid removal of the disease is to be preferred to the application of the ligature, which is a tedious and by no means safe proceeding. It is noticeable also that the general opinion respecting the *écraseur* is, even when slowly and cautiously used, that it cannot be relied upon as a preventive of profuse hæmorrhage. (See *Lancet*, April 9, 1870.)

Treatment of Epispadias.—In a clinical lecture on this subject Professor Billroth, after describing the various forms of the deformity, remarks that it is accompanied by constant dribbling of the urine, and that it renders cohabitation impossible, or at all events ineffective. He then asks,—Is it possible to cover the slit bladder with a pad? but acknowledges that it is almost impossible to construct one which shall be efficacious when the patient is moving. More, however, he thinks, can be done by operation, though it can never cure the incontinence.—Nearly all cases operated on in former times were unsatisfactory

in their results, probably because the operators endeavoured to gain too much at once. In a remarkably successful case treated by Thiersch, with untiring patience, the urethra was first closed at the glands, then for the closure of the remaining portion two long rectangular flaps of the lateral surface of the penis were made in such a manner as to effect a bridging over of the urethra, small apertures which remained above and below the bridge being cured by subsequent operations. After undergoing treatment for eighteen months the patient possessed a nearly normal penis and prepuce, capable of micturition in a jet, and of performing the coitus in a perfect manner. Professor Billroth enters an earnest protest against performing the operation for any of the slighter cases, and adduces a case where a trifling operation produced suppuration of both corpora cavernosa, frightful pyæmia, metastatic sloughing of both choroids, and disease of nearly all the joints. In another case the application of the actual cautery to close a minute opening lead to a fatal result. (See *Medical Times and Gazette*, March 12, 1870.)

Nitrous Acids as an Anæsthetic, with Coxeter's Liquid Gas.—Mr. Fox strongly advocates the further employment of this gas in operative surgery on the following grounds:—1. Its safety; 2. The rapidity with which anæsthesia can be induced, viz. in from 50 to 100 seconds; 3. The readiness with which a patient can either be kept for a prolonged period in the anæsthetic state, or if desired can be promptly and thoroughly awakened; 4. Because it is actually pleasant to the patient to inhale, and consequently much fright and mental distress is avoided, diminishing the danger of death by syncope; 5. Because the recovery is usually bright, pleasant, and complete, any after discomfort being extremely rare; 6. Because sickness has never in his experience occurred during the administration of the anæsthetic, and but *rarely* afterwards. Mr. Fox states he has employed it in over 1,500 cases, and that Blondin on two occasions performed all his most difficult feats on the high rope 400 feet long within three hours after the gas had been administered to him by Mr. Fox for some extremely severe dental operations. (See *Lancet*, April 2, 1870.)

On the Use of the Calomel Vapor Bath.—Dr. Lamprey gives the details of a case of keratitis and sclero-choroiditis, which after extraction of bad teeth rapidly improved under the employment of ten and subsequently of twenty grains of calomel as a vapor bath, used twice a week, with five grains of bromide of potassium three times a day, and an alterative pill of podophyllin ipecacuanha, and extract of gentian at bedtime. Another case in which a cure was effected by the calomel bath was one of lupus exedens, probably with a syphilitic com-

plication. The apparatus he recommends is exceedingly simple, consisting only of a good spirit lamp and a tin patty-dish, which is filled with an ounce and a half water, with which the calomel is mingled. The latter is set upon a small tripod over the lamp, under the chair on which the patient is sitting, well invested with blankets; the water evaporates first, and then the calomel. Exposure for half an hour to the vapor is sufficient. (See *Medical Times and Gazette*, March 19, 1870.)

Use of Buttermilk in rearing Infants.—Dr. Ballot of Rotterdam, observes that this plan is now largely pursued in that city, and is commonly practiced in the country. He points out the variations that exist in ordinary cows' milk, and condemns the plan of feeding cows on the grain which is the refuse of distilleries.

Treatment of Syphilis.—Dr. Farquharson, of Rugby, states that, having begun army practice with a horror of mercury derived from the teachings of the anti-mercurial school, he was gradually forced to have recourse to it from the comparative failure of his results. The worst cases of syphilis in his experience had been those in which either very little mercury had been given or none at all. Mercury, however, should be used with certain precautions, first amongst which is good food, as calomel vapour baths produced salivation in patients kept accidentally on low diet. He is of opinion that it should be given early in the disease, and is inclined on the whole to prefer its internal use. Chlorate of potash after fair trial, he thinks, has no influence on syphilis. (See *British Medical Journal*, March 12, 1870.)

Addison's Disease.—Dr. Gordon gave the following summary of the principal facts known in respect to Addison's disease, at a meeting of the Army Medico-Chirurgical Society, held at Portsmouth, *à-propos* of a case reported by Dr. Wales. 1. It is a matter of doubt whether "Addison's disease" may not at times be hereditary. 2. It is equally so whether, under certain conditions, it may not be connected with syphilitic cachexia. 3. It has no necessary connection with pulmonary tubercle. 4. Nor with albuminuria. 5. The presence of the characteristic disease of the supra-renal capsules is not necessarily attended by regional pain. 6. In only one of the cases described did medical treatment appear to retard the disease. 7. The symptoms of the disease are, for the most part, peculiar and characteristic. 8. Bronzing of the skin may occur where "tubercular" matter is not after death found in the supra-renal capsules. 9. It may be matter of doubt whether in some cases the bronzing of the skin described as Addison's disease, may not really be the discolora-

tion which attends secondary syphilis. 10. The exact relationship between bronzing of the skin and supra-renal disease are still open questions. 11. There is some reason to believe that Dr. Addison himself was aware that the connection between the two conditions was not invariably found to exist. 12. The most frequent morbid appearance in the supra-renal capsules, when disease of those organs is discovered, in cases of bronzing is "tubercular" deposit. 13. It is possible that, as suggested by Dr. Watson, bronzing only occurs when disease of the supra-renal capsules is far advanced, or where both these organs are much disorganized. 14. So far as observations have yet gone no connection has been traced between bronzed skin and disease of any other of the ductless glands. 15. And finally, it seems reasonable to believe that the true nature and associations of this effection, known as Addison's disease, have yet to be established. (See *Medical Times and Gazette*, March 12, 1870.)

Treatment of Nævi by the introduction of Red-hot Needles.—Mr. Croly communicated to the Surgical Society of Ireland a remarkable case of nævi occurring in a very young child. In connection with the face and head there were four distinct vascular tumours. One was situated on the lower lip, a second in the right parotid region, a third on the back of the neck, and a fourth on the tongue. The first-mentioned was treated by plunging red-hot needles through its substance. This method of treatment answered admirably, and was followed, curiously enough, by the spontaneous cure of tumours two and three. Mr. Croly was inclined to attribute this happy and unlooked-for result to the influence of the operation on the sympathetic nerve-supply of the nævi. (See *British Medical Journal*, April 2, 1870.)

On the Cure of Chronic Gonorrhœa, Gleet, and Leucorrhœa by the application of Ice.—Dr. Gustav Abrath, of Sunderland, ventures to introduce to the profession the efficacy of ice in the above-named affections. He gives a number of cases in which successful results were obtained after a great variety of treatment had been adopted. In all cases, he observes, the general health of the patient should be carefully inquired into, and the presence of any complication ascertained, and then a suitable general treatment should be combined with the local. In his first case, which will illustrate his mode of proceeding, Capt. M——, a German, aged 36, had, under the advice of various surgeons in Berlin, Paris, and London, employed injections, blisters, medicinal treatment, and the treatment adopted during a sojourn of six weeks in a hydropathic establishment. Dr. Abrath, in the first instance, ordered sulphate of quinine and

sulphate of iron, and told him to apply cold water to the parts. But thinking afterwards that the application of intense cold internally to the surface of the urethra might be more beneficial, he took advantage of a severe frost to procure some fine icicles, made artificially by allowing water to filter slowly through linen. These were introduced into the urethra in the manner of a bougie, and allowed to remain till they were dissolved. This was done night and morning, and in ten days the patient was well. Before applying the icicles the bladder should be evacuated, and the urethra washed out with a little cold water, and about six icicles should be introduced in succession, night and morning. The treatment of leucorrhœa he conducts on a similar principle. (See *Medical Times and Gazette*, April 9, 1870.)

Bromide of Potassium in Mammary Tumours.—Dr. Osborn adopted this remedy in the case of a woman aged 39, and mother of five children. In March 1869, four months after weaning a child, she began to feel acute darting pain in the left breast, with some swelling. In August she had a sudden discharge of a teacupful of florid blood from the nipple. On examination the nipple was found to be retracted, but this was stated to have always existed. There was a small cicatrix a little above the nipple through which the hæmorrhage had taken place, and which presented a small orifice, from which a little ichorous discharge exuded. A hard, tuberculated, and firmly attached tumour of considerable size occupied the breast, and was accompanied by acute pain. A lotion of vinegar and water was ordered, and she was directed to take a mixture of bromide and iodide of potassium, which relieved the pain; but as she complained of debility, the mixture was suspended, and quinine given instead. Under this plan the pain returned, and Dr. Osborn determined to try the bromide externally by adding it to the vinegar lotion, which had caused a slight eruption on the skin, and thus facilitated the absorption of the salt. Two drachms of bromide of potassium were mixed with six ounces of vinegar, and ordered to be applied twice a day by saturating a piece of flannel with the lotion, and covering it with oiled silk. After pursuing this plan for six weeks the tumour was found to have become considerably reduced in size, whilst the patient remained free from pain, and soon returned to her usual household duties. He refers to several other cases in which considerable improvement followed the employment of the same remedy. (Ibid. April 16, 1870.)

Extracts from British and Foreign Journals.

Turpentine in Traumatic Erysipelas.—Dr. Gustav Borgien, of Königsberg, communicates the details of two successful cases of traumatic erysipelas in which this remedy was employed. The first was that of a child a year and a half old, who one evening had a violent shivering fit, followed by redness, swelling, and pain in the right leg and incapacity of moving it. Pain in the head, thirst, and loss of appetite were complained of; the bowels were confined. The child had been suffering from eczema of the right ear, and had scratched off the scabs. A few days before the above symptoms appeared the whole of the right side of the face was effected with erysipelas. Moreover some eczematous pustules had formed on the knee of the effected side a few days previously, and had from neglect become ulcerated; and from this point the erysipelatous symptoms had extended over the limb. He was ordered small doses of calomel, to be taken every two hours, and the erysipelatous parts to be brushed over with oil of almonds and covered with wool. The next day the child was better, and he was now ordered to have the surface of the leg painted with ol. terebinthinæ. This produced pallor of the erysipelatous surface, and the swelling diminished; after the second application of the remedy, the power of movement of the limb returned, and in a few days the child was well. The second case was one of erysipelas of the foot, in a man of 36 years of age, from slight injury to the little toe. Here, also, the application of the turpentine speedily caused pallor of the skin, and after two or three days, the remedy being employed twice in the twenty-four hours, a small abscess only remained on the little toe, which required to be opened, the man making a good recovery without further inconvenience. (*Berliner Klinische Wochenschrift,* Feb. 14, 1870.)

Lime-water in Bright's Disease and Anasarca.—Kuchenmeister recommends the employment of lime-water in Bright's disease on the ground of its power of dissolving proteine. He has administered it also with the object of dissolving the proteiniform infiltrations of the kidneys in scarlet fever. He gives one or two teaspoonfuls of lime-water in milk every three hours. Under its influence the quantity of urine augments to many

times its original amount. Slight hæmorrhages occasionally require that it should be stopped, but the quantity of albumen diminishes, whilst the number of fibrinous and epithelial cylinders in the urine seems to increase. The success of lime-water treatment is remarkable in anasarca, but less brilliant in dropsy of the serous cavities. (*La Rev. Médicale*, Feb 26, 1870.)

Therapuetic Uses of Iodoform.—Dr. Stiles Kennedy, of Newark, Delaware, communicates the results of his observations on the effects of this drug, which he considers to possess great value in various constitutional and nervous diseases. He gives the details of a case of periodic gastric neuralgia, probably connected with a rheumatic diathesis of several months' standing, in a man not 30 years of age, of antecedent good health and vigour. The pains in his stomach recurred on each afternoon, and lasted well during the remainder of the twenty-four hours. Quinine, iron, morphia, arsenic, blisters, mercury, and other remedies, had been administered without advantage. Two grains of iodoform, and the same quantity of pulv. ferri, were prescribed in pills three times a day, and in a week he was well. The second case was that of a man aged 45, who suffered from violent and frequently recurring pain in the scalp, running from the eyebrows to the occiput. A great variety of treatment had here also been adopted, the last being heroic doses of quina, morphia, iron, and arsenic in combination, but without effect. Dr. Kennedy therefore ordered iodoform, pulv. ferri, of each one hundred grains, veratria one grain; to be divided into fifty pills, one to be taken three times a day. After twelve days' continuance the pain completely disappeared, and in the course of the past year only reccurred twice, on each occasion being quickly removed by recommencing the use of the pills. A similar combination, without the veratria, was found very effective in sciatica, by another physician, and in several cases of ague by a third. Dr. Kennedy recommends it strongly as an addition to the ordinary plasters and ointments for syphilitic periostitis, &c.; in fact, he says, an ointment containing from thirty to sixty grains of iodoform to an ounce of lard is one of the most delightful remedies, so far as relief is concerned, to painful burns, sores, chancres, boils, &c., that can be found, promoting rapid healing. In two cases of chancre the dry powder was applied with magical results. (*The Medical and Surgical Reporter*, vol. xxii 1870, No. 3.)

Hydropathic Treatment of Typhus.—Dr. Stieler has written an important paper on this subject, recording the deaths of ten cases of typhus under the cold-water plan of treatment. He remarks that as this method has been very extensively employed in Germany, and has obtained a footing in most of the large hospitals, whilst its advantages have been admitted by

most observers, it is only right that fatal cases should be carefully investigated, in order if possible to ascertain the circumstances which may render it inappropriate. It appears that from the 1st of October, 1868, to the 1st of June, 1869, a hundred and twenty-six cases of typhus were treated with cold water, of whom ten died, or 7·9 per cent., whilst the mortality previous to the adoption of the plan was 12 to 15 per cent. The mode of using the cold water consisted in placing the patient in a half (or slipper?) bath at a temperature of from 50° to 60° F., for a period varying from a quarter to half an hour. As soon as the temperature of the axilla stood at 103° F., he was placed in the bath, the water of which was agitated around and thrown over him. If the temperature of the axilla was as high as 104°, he was douched while in the bath with a little ice-cold water. In the intermediate period the patient was covered with compresses dipped in iced water, which were changed when requisite, whilst ice-bags were applied to the head, chest, and back. Medicines were rarely administered, and only on pressing emergencies.—Then follow the details of the ten cases, with which we shall not trouble our readers, but we append the more important conclusions he draws from their consideration. 1. The fatal termination of typhus cannot be prevented by the cold-water treatment in cases ending fatally through local disease of the intestine, as in perforation and intestinal hæmorrhage, nor in those cases that end fatally in consequence of intercurrent local affections, as in croupous pneumonia, nor in those who come too late under treatment with symptoms of fatty degeneration of the heart; nor in those in which with persistent high temperature certain contra-indications to the cold-water plan of treatment presented themselves, as failing power of the heart or intestinal hæmorrhage; nor, lastly, in cases in which reduction of the temperature cannot be satisfactorily accomplished on account of the existence of states of the system induced by tuberculosis or alcoholism. 2. He is of opinion that the existence of pneumonia is no contra-indication to the cold-water system. 3. The plan should not be presevered in if any bad symptoms supervene from the lowered temperature. 4. Fevers with well-marked remissions and exacerbations, if the latter are not very violent, yield to this treatment better than those in which the temperature is more moderately yet persistently high. 5. The individual power of resistance to the lowering of the temperature should be carefully watched in every instance, and this not by a mere reference to the thermometer, but by attention to changes in the pulse, the occurrence of delirium, of albuminuria, &c.; and if these are present, of course the baths must be discontinued. Lastly, they are of opinion that this method of treatment is widely applicable to this class,

if due care be taken. (*Zeitschrift f. rationell. Medicin*, Band xxxvi. Heft iii.)

Internal Administration of Carbolic Acid.—Dr. Habershon observes that in some conditions of weakness, especially when the bronchial tubes are dilated and the mucus is retained in the bronchi, putrefactive decomposition ensues, and the breath becomes extremely offensive. Again, in chronic bronchitis, the muco-purulent secretion not unfrequently becomes so offensive that the patient is greatly distressed. In these instances, as also in some stages of phthisis and in diphtheria, carbolic acid may be of great service when employed as an inhalation. It is however, he states, in some diseases of the alimentary canal that he has found most benefit from the internal use of carbolic acid. In many functional as well as organic diseases of the stomach fermentative action takes place; distension, pain, eructation, and vomiting, consequent on retention of the digested food in the stomach, are the conditions under which the advantages of the internal use of carbolic acid are most clearly displayed, partly, no doubt, from its power in checking cryptogamic development. It is not advisable to administer it where there is much irritability of the stomach, nor where there is redness of the tongue. It is, however, very serviceable in cases of atonic dyspepsia, of chronic ulcer of the stomach, when active ulceration has ceased, and in obstruction of the pylorus, whether arising from fibroid or cancerous disease. It should be administered with extract of henbane, with compound ipecacuanha powder, or it may, with the aid of a little gum tragacanth, be made to combine with quinine, iron, aloes, &c. When conjoined with lime or gallic acid, it may be used for flatulent distension of the colon, especially when this is accompanied by looseness of the bowels. (*Guy's Hospital Reports*, January 1870.)

Treatment of Gout.—M. Fontaine has recently published a memoir on this disease, in which he lays down a new method for its treatment. His work has been reported on to the Academy of Medicine of France, by MM. Béclard, Vulpian, and Bouchardat, and from that report we gather the following particulars. In accordance with all observers from Sydenham to Garrod, he recognizes the value of colchicum, preferring the tincture of the seeds to the other preparations, and he administers it only in the form of injection, and not by the stomach, the functions of which, he thinks, are already too seriously disordered. The use of this remedy also, he maintains, ought not to be persevered in without occasional periods of interruption. To combat the diathesis, or rather to prevent the formation and to favour the destruction or elimination of the uric acid, he has recourse to three different alteratives: 1. The arseniate of potash; 2. The chlorate of

potash; and 3. The benzoate of lime. The arseniate of potash he administers in small doses, but for some length of time, and he conceives that this salt exercises a reparative action on the body and blood-globules, and a regulative action on the combustive operations. He proposes the chlorate of potash as an agent to oxidize the uric acid; admitting with M. Gubler, and believing that he has demonstrated from his own observations, that it undergoes partial decomposition in the economy. Following the example of Drs. Ure and Bouchardat, he prescribes the benzoate of lime, not with the object hitherto attempted of transforming the urate of soda into the more soluble hippurate of soda, but as a solvent for the urates, and for its slightly diuretic action. (*Bulletin de l' Académie Impériale*, Feb. 15, 1870.)

Chloral in Epilepsy.—Chloral bids fair to become the universal panacea, and the last disease said to be relieved by it is epilepsy. The following case is recorded by Dr. Weidner, of Jena: a young man, 19 years old, who had been suffering from epilepsy for three years. At first the fits were irregular, occurring on two successive days, and then intermitting for several weeks. Each attack was preceded either by a shriek or rapid change of temperature, with an aura of brief duration, as though a chill extended over the whole body. The loss of consciousness persisted for five or ten minutes. The tongue was usually bitten, and other ordinary symptoms of a fit of this nature were present. The disease appeared to be hereditary, the father as well as two brothers suffering from similar attacks. No cause could be assigned for their occurrence. The respiration and circulation, the sexual organs, the make and shape of the body and head, were all natural, and no marks of injury could be discovered on any part of the body. Latterly the attacks had occurred with great regularity once a week on the same day and hour. Two hours before an expected attack the patient was directed to take twenty-grains of hydrate of chloral. In the course of a quarter of an hour he fell asleep. At the usual time of the occurrence of the fit he was lying quite still with tranquil respiration, and awaked free from any headache about three hours after the hour of attack. On successive weeks the same plan was adopted with similar results, and he is now taking bromide of potassium in gradually increasing doses, with every prospect of a permanent cure. (*Deuteches Archive für klinische Medicin*, Heft i. 1870.)

Treatment of Trachoma or true Granular Lids.—Dr. Kittel gives the characters ordinarily presented by this troublesome and persistent affection in various cases, and also the following details of treatment in one of them. The patient

was ordered lapis divinus alcohol.[1] gr. xvj., aq. destillat. ʒ iv, tinct. opii ♏xx, liquor plumbi acetatis gutt. iij; the eyelids to be moistened with this liquid every two hours. Internally the patient was ordered inf. of senna, with sulphate of soda in small doses every hour. In the course of a week the lachrymation had ceased. He was now directed to have a small quantity of a mercurial ointment applied three times a day to the lids, composed of white precipitate four grains, and lard a drachm. After seven days again the ointment was replaced by vinum opii; after the employment of which for a fortnight only a slight nebula remained. (*Allgemein medicinische Zeitung*, No. 52.)

Indications and Contra-Indications for Iron in Chlorosis.—M. Béhier states that ferruginous preparations should be prescribed whenever the number of red corpuscles falls below 80 per 1,000; the difficulty is to make the patient tolerate it. There is a difference between chlorosis with amenorrhœa and chlorosis with metrorrhagia; in the former iron is indicated; in the second it may augment the hæmorrhage, especially if administered at or near a menstrual period. When hæmorrhage is present, M. Béhier recommends that the iron should be replaced by the pills of Helvetius, containing alum and sandragon, to which a little opium may be advantageously added. M. Béhier considers that iron should be given during meal times, and not before. He has found pills composed of iron and manganese, as suggested by M. Petréquin, very useful, being better supported than those of pure iron. He agrees with M. Trousseau in thinking that ferruginous salts may aid in the development of tubercle, and that in certain cases of anæmia iron may produce congestion of the lung and favour hæmoptysis. (*Lyon Médical*, March 27, 1870.)

Treatment of Arthritis deformans.—The term arthritis deformans is applied by Volkman in the last part of Pitha and Billroth's Manual of Surgery, to a form of disease that is apparently identical with the chronic articular rheumatism of English writers. It has been ascertained by Virchow to be an affection of great antiquity, as its marks are clearly recognizable in bones obtained from the graves of Huns in Pomerania. It consists of an inflammatory process, usually of many years' duration, materially altering the form of the joint, but never entirely destroying its capability of movement, nor ever terminating in suppuration or caries. It is rarely or never limited to one joint. The bone becomes expanded near the articular

1 This preparation appears to be a mixture of equal parts of sulphate of copper, sulphate of alum, and nitrate of potash, which are fused together and combined ultimately with a little camphor.

extremity, the margins of the joint in particular being thickened and beset with nodules. The tissue of the epiphysis is unnaturally open, and the marrow of the cancelli oily. The cartilages are here and there hypertrophied, fibrillated, ossified, and laminated, sometimes presenting fatty degeneration, and wearing away with porcellanous deposit of the exposed bone. Intra-articular ligaments, like the lig. teres and cruciata and menisci, undergo fatty degeneration and fibrillation. The articular capsules become thickened, the ligamenta mucosa hypertrophied and villous, and in some rare cases ossified. In regard to its treatment, M. Volkmann strongly recommends iodide of potassium, or, still better, tincture of iodine, in doses of five drops in syrup three or four times a day. Colchicum, he thinks, is much less effective, nor has he a much higher opinion of aconite, guaiacum, or corrosive sublimate. Baths, especially those of Wildbad, Gastein, Teplitz, are very serviceable, as are also, in suitable cases, Turkish and Russian baths, and the hydropathic treatment generally. The affected joints should be used as much as possible, both actively and passively, and iodine may be employed hypodermically, as recommended by Schuh. (*Der praktische Arzt*, No. 12, 1869.)

Treatment of Snake Bite.—Dr. Fayrer, in an interesting series of experiments, in which he has tested the validity of the claim made by Dr. Halford for ammonia as an agent to effect a speedy cure of the bites of the poisonous snakes, appears to have arrived at opposite conclusions to those of the Melbourne professor. Large dogs were caused to be bitten after their veins had been exposed, and every preparation made for rapidly effecting injection, yet in these, sometimes after a brief space of temporary improvement, death rapidly ensued. The supposed remedy, liquor ammoniæ of sp. gr. ·959 B. P., was in some instances injected directly into a vein, whilst in others it was hypodermically injected, but with equal ill success. Attempts were made to make a cobra bite itself, to make one cobra bite another, and to make a viper bite a cobra, &c., and the curious result was obtained that the poison of these animals has no effect, or if any, very slight effect upon itself, upon its own species, or upon venomous snakes, whilst it is injurious to innocent snakes. Dr. Fayrer thinks the poison acts by directly effecting the nervous centres, and that its action is far too swift and powerful to permit of the employment of any antidote. (*Edinburgh Medical Journal*, March, 1870.)

Lotion for Pityriasis.—Hardt gives, in the *Union Médicale*, the following formula:—Nitric acid, 1 part; distilled water, 100 parts; the mixture to be freely applied to the surface of the affected part. Instead of this an oxygenated ointment may be

applied with advantage, composed of 30 grammes of fat and 1 gramme of nitric acid. (*Neues Repertorium für Pharmacie*, Heft i., 1870.)

On Galvano-Puncture of Nævus.—Dr. J. Duncan states that, having experienced the advantage of electrolysis in aneurism, especially in the cirsoid variety, he was encouraged to hope, from the resemblance between this and nævus, that it would prove equally successful in this affection also. He details six cases, of which the following is selected at random:—

Case IV. was a nævus of the upper lid, with the skin completely involved. Two operations hardened the subcutaneous portion, which was thereafter largely absorbed. After two months, as it was again increasing, an operation was directed to the cure of the skin, which had not as yet been affected by the electrolysis. Its vitality was destroyed, and a black slough separated almost without suppuration. A cicatrix remained, but did not interfere with the motions of the lid.

There can, he thinks, be no doubt that every nævus is curable by electrolysis, though many forms may be more quickly and conveniently cured by other means. To effect a cure, the electrolytic action must not, as in cirsoid aneurism, be limited to the occlusion of the main affluents, but must pervade the whole nævus, and act directly on almost every little vein. But electrolysis cauterizes the tissues as much as it coagulates the blood, and it is evident, accordingly, that when the skin is much affected a slough will be produced. The slough is tough and dry, excites little irritation, is singularly slow to separate, and does so without a drop of hæmorrhage, even though part of the nævus remains. It is therefore safe and effectual; but if a cicatrix must be left, there is reason for preferring the ligature as more safe and effectual. The galvanic apparatus is cumbrous, and in most cases the operation requires frequent repetition. On the other hand, he thinks this mode possesses many advantages in subcutaneous nævi about the head and neck, and remarks that there is a class of nævi beyond the reach of knife and ligature, and he gives an instance of one where the nævus so occupied the hand of a child (a year old) that the fingers protruded from the mass like small roots from a turnip. In this a very successful result was obtained by galvano-puncture, a few hard nodules alone ultimately occupying the palm, and the motions of the hand remaining perfect. Again, those on the cheek and neck are well adapted for it. Granting patience on the part of the patient and surgeon, he thinks in such cases it is superior to injection, ligature, or excision. He uses Bunsen's battery, and has no fear of the development of gas, or of its entrance into the circulation to any serious extent. (*Edinburgh Medical Journal*, March.)

Rheumatism complicated with Chorea cured by Bromide of Pottassium.—M. Gaillard recommends the bromide of potassium, less as a remedy for ordinary chorea, on which it appears to exert but a doubtful influence, than for the more serious forms in which the fatal termination is caused by the disordered and incessant movements of the patient. M. Gaillard records a case in which the patient was a boy of fourteen years of age, who had suffered from chorea for five days, who could neither walk nor keep himself in the erect position. He threw himself out of bed five times in one night, and could obtain neither sleep nor rest; his skin became excoriated at various points by the friction of the surface with the bed-clothes. Sulphur baths and chloroform, given internally, were employed for several days without benefit. Fifteen grains of bromide of potassium were then administered, and increased successsively to 30, 45, and 60 grains. From the first day considerable amelioration of the symptoms occurred, and the patient slept. The improvement became more marked day by day, and the cure was complete at the expiration of thirty-four days. (*La Revue Médicale*, March 12, 1870.)

New Form of Poultice.—In the last part of the *Nouveau Dictionnaire de Médecine*, M. Jeanel observes that the gelatinous silex suggested by De Mougeot, is particularly worthy of attention. It consists of silica, precipitated by hydrochloric acid from silicate of potash in solution, which has been washed till it is perfectly tasteless. If to this one-tenth of its weight of dextrine, or of gum-arabic in powder, be added, it forms, at a very small price, an emollient unchangeable poultice, which serves as an excipient for fatty substance or for any disinfectant, narcotic or stimulants remedy.

Treatment of Tinea favosa by Alcoholic Fomentations.—Professor Cantoni has recently experimented on the effects of fomentations of rectified spirit, in a case of tinea favosa, in which the crusts had been removed by the constant application of warm poultices. In this case a cure was effected at the close of the seventh week of the duration of the disease. It appears to be a plan worthy of further trial, both for its simplicity and effectiveness. The alcohol, in penetrating the epidermis, acts as an energetic parasiticide, and accomplishes the destruction of the achorion Schönleinii. It is important that the alcohol should be of sufficient strength. (*Journal de Médecine*, and *Bull. de la Soc. Méd. de Grand*, &c., Feb., 1870.)

Hypodermic Employment of Iodoform.—Dr. G. Du Plessis states that, on reading the monograph of Righini, the thought struck him that this remedy might be employed with advantage

by hypodermic injection, and he immediately cast about to discover some vehicle which would dissolve sufficient of it to enable the injection to be performed without risk. He found a solvent for it in ether, and immediately experimented with the solution in a case of tuberculous meningitis, attended, as usual, with violent pain, in a girl of fifteen. The pain produced by the injection was, however, intense, and he proceeded to try the effects of solution of iodoform in various essential oils, as in those of bergamot, rosemary, anise, and cajeput, but these presented the same inconvenience as ether. Ultimately he found a suitable agent in oil of almonds, the proportions used being one of iodoform to twelve of the oil, which was slightly warmed. He found that this quickly relieved pain in a case of herpes, accompanied by intercostal neuralgia, and considers it to be well adapted for all cases when pain is to be subdued. (*L'Imparziale*, 16 Marzo, 1870.)

Therapeutic Employment of Oxygen.—Dr. Buller reports three cases in which he found benefit accrue from the use of oxygen. The first was a boy aged 15, emaciated and weak, with pallor of face, constipated bowels, bad appetite, and apparent deformity of spine. The use of oxygen was now commenced, whilst iron and aloes were administered internally; in sixteen days he had completely recovered. The second case was a boy aged 14, emaciated and anæmic, with palpitation of the heart, night sweats and cough, bad appetite, and costive bowels. After inspiring four gallons of oxygen per diem for eight days, improvement set in, and resulted, in three weeks, in complete recovery. The third case was of similar nature in a girl aged 18, in which the inhalation of oxygen, accompanied by the internal use of aloes and sulphate of iron, effected a cure in a fortnight. There was marked increase in the temperature of the surface in this case after each inhalation. (*New York Med. Journal*, No. 5, vol. xi.)

Notes and Queries.

DEPARTMENT OF NEW INVENTIONS.

Analyses of various Samples of Potassium Bromide.[1]—All the samples examined contained bromide, chloride, and iodide of potassium, and also sulphate of potassium and sodium, these latter two salts forming in every case the greater part of the amounts given in the table under the heading of "other impurities." Two of them (Nos. I. and III.) contained minute traces of bromate, and two (Nos. I. and VI.) traces of carbonate of potassium. No other impurities were found in any of the samples.

Particulars of the Samples analysed:

No. 1. From Thomas Morson and Son, 124, Southampton Row.—White, very small crystals, dry. Contains slight traces of bromate and carbonate of potassium; traces of sulphate of potassium and sodium.

No. II. From Priest, 14, Parliament Street, Westminster.—White, moderately large, opaque crystals, dry. Contains strong traces of sulphate of potassium and sodium; no bromate or carbonate.

No. III. From Augustus Whitburn, 174, Regent Street.—White, small crystals, somewhat moist. Contains traces of bromate and sulphate of potassium and sodium; no carbonate.

No. IV. From W. Lambert Riddle, 34, Tavistock Place.—White, very large, opaque crystals, dry. Strong traces of sulphates; no bromate or carbonate.

No. V. From G. Mellin, 16, Tichborne Street, Regent Street.—White, tolerably large, somewhat opaque crystals, dry. Contains considerable traces of sulphates; no bromate or carbonate.

No. VI. From Mr. Edmunds, 8, Hercules Buildings, Lambeth.—White, moderately large crystals, dry. Contains very con-

[1] As this comparatively new drug is now coming into most extensive use, and enormous quantities of it are being manufactured and sold, it appeared right to the Editor to institute an inquiry into the average purity of the samples sold in respectable chemists' shops in various parts of London. A similar inquiry has been carried out in Paris, with results which were recorded in the *Practitioner* for July, 1869.

siderable traces of sulphates, and strong traces of carbonate of potassium; no bromate.

100 parts of the salts contained :—

No.	Potassium.				
	Moisture.	Bromide.	Chloride.	Iodide.	Other impurities.
I.	0·40	93·52	4 75	0·240	1·090
II.	0·47	93·07	5 04	0·018	1·402
III.	1·03	89·79	8·16	0·021	0·999
IV.	0·67	94·07	3·81	0·045	1·405
V.	0·31	91·90	5·25	0·062	2·478
VI.	0·60	92·61	3 67	0·352	2·768

CORRESPONDENCE.

Miscellanea Therapeutica.—Dr. R. G. Daunt, Campinas, Brazil, sends us the following :—

"I was surprised to see lately the ipecacuanha treatment of dysentery spoken of in the *Practitioner* as a practice necessary to be recommended. Here in Brazil it is the principal domestic remedy after a cooling laxative. What is the practice of English-speaking physicians as to the choice of a preparation? Here the decoction in strong doses is preferred as the best anti-dysenteric form in which to give ipecacuanha: in twenty-four hours the decoction of half an ounce to an ounce of the bruised root. I saw with surprise that Gubler, in his semi-official commentary on the French 'Codex Medicamentarius,' gives a most scanty notice of this drug, and is silent as to the non-emetic and anti-dysenteric virtues of the decoction. Gubler, it must always be remembered, represents the sceptic material school of Paris, and is not much of a believer in drugs.

"Brazil possesses another plant called Espelina; the *Periantho-podus espelina*, which is considered as equal, and even in many cases superior, to ipecacuanha, and also as an alexipharmic. It would be well if the administration of some great hospital ordered from Rio de Janeiro some pounds of the root, which is cheap, and instituted trials. The dose may be equal or superior to that of ipecacuanha. This recommendation might be extended to very many other Brazilian vegetable products.

"What is known in England as to the value in pulmonary diseases of a substance called strangely *Helicine*, which is the product by distinctive distillation of spiraic acid? It is prepared in Germany. We have it here, as in Brazil, the medicine and population of the whole world being represented, the

apothecaries' assortment of drugs is equal to the list of all the Pharmacopœias and to the medical practice of all countries. Among the many physicians I have known here was one who had held an employment in Magnesia, in Asia. He afterwards died of yellow fever in New Orleans.

"What is the real value of chlorine (the aqueous solution) in typhoid fever? Hufeland lauds it. Gubler and others say that if it has power to destroy the organic miasms which circulate in the blood in fever, it must be equally destructive of the life of the blood-globules. Is the use of alumina (*Terra argillosa*) in the state of hydrate known in England as a valuable remedy in chronic diarrhœa in children and debilitated patients? It is used in Saxony, and considering the high price of bismuth (also much preferable in the form of the hydrated oxide) I think it deserving of trial in public institutions. Is bryony (its tincture) used in England in pneumonia? I use it in the latter stages subsequently to the veratrum viride. An apothecary's assistant from Vienna informs me that Skoda employs bryonia very frequently in pulmonary disease.

"What is the proper treatment —can there be any effectual (or efficacious, I believe, is the English word) for softening of the mucous membrane? Is the *allaitement* (suckling) of children by pregnant nurses or mothers considered prejudicial to the children? Here in Brazil it is fatal to them. The diarrhœa which attacks children who have ingested the milk of a pregnant woman is, as a rule, incurable.

"What real value has the pulvis antimonialis of the British Pharmacopœia of 1864? I cannot believe that this preparation is the true James' powder. The white oxide of antimony employed in forming the officinal powder is in my opinion a preparation of equal value with tartar emetic; and if I were to be deprived of one of these remedies, I could more easily dispense with the tartar emetic. But the dose of the white oxide to produce good effect must be *at least* one drachm of 72 grs. in the twenty-four hours for the adult, and 24 to 36 grs. for children; while James' powder is said to be, and I believe is, useful in comparatively insignificant doses. Has any one given ʒ iij of the pulvis antimonialis in twenty-four hours? I give the corresponding quantity of ʒ j of the white oxide of antimony without the slightest emetic or cathartic action. On the contrary, its action is as mild, as efficacious, and when children suffering from intestinal irritation (diarrhœa, red tongue) are attacked with pneumonia, I give fearlessly ϑ j or ʒ ss (up to three years of age) in the twenty-four hours, mixed with the true *occuli cancrorum*, which we have here imported from Russia. The doses recommended by Trousseau are, I believe, larger, and in case of need I would administer such larger doses with entire confidence."

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[1] Any of the foreign works may be procured by application to Kelly, Piet & Co., Importers and Booksellers, 174 Baltimore Street, Baltimore.

THE PRACTITIONER.

JUNE, 1870.

Original Communications.

THE DIAGNOSIS OF PNEUMONIA, AND ITS TREATMENT BY RESTORATIVES.

BY OCTAVIUS STURGES, M.D.

In a paper published in the St. George's Hospital Reports, I endeavoured to show, from a review of a large body of cases, that the term pneumonia was very widely applied. It appeared, for example, that the name was used in some instances to describe the local effect of a blood-poison, whilst in others it denoted a condition which was mainly due to mechanical obstruction; only in a few cases did it apply to that solidification of the lung which arises from the presence of an exudation, and where the existence of pleurisy, and sometimes of pericarditis, seems to indicate that the pneumonia is but one amongst many expressions of the hyperinotic state of the blood. That this should be so where error of diagnosis was out of the question, and every case was named according to the supposed evidence of the post-mortem examination, argued, I thought, that the boundaries of pneumonia were not very strictly defined. It would have been easy to enlarge this list by including instances of pulmonary collapse and of congestion occurring to infants and aged people, and described as lobular, or as low pneumonia. It is acknowledged indeed, at present, that these conditions, for the most part, have no connection with inflammatory action;

but the effects of the earlier teaching may be said to linger, while we continue to insist upon the exceptional character of simple pneumonia in children, and still speak of bronchitis as frequently "lighting up inflammation in the pulmonary parenchyma."

Regarding, therefore, the very wide associations of this word pneumonia, I venture to urge that we are still in want of a sufficiently rigid definition, and endeavoured to show that no account of the disease could be accepted which kept out of view those express phenomena of temperature, secretion, crisis, and the like, which serve no less than the physical signs to distinguish inflammation of the lungs as a specific disease.

It need hardly be said, were not the contrary so impressively taught, that the sounds within the chest, or to be elicited from it, can never in themselves apprise us of the fact that the lung is inflamed, or do more than indicate the physical state of the organ. It might be, indeed, that certain sounds should occur only in association with a certain diseased state. If that is ever the case, it certainly is not so in regard to any of the sounds of pneumonia. Minute crepitation will accompany the engorgement which is preliminary to hepatization, and it will accompany other engorgement; similarly tubular breathing, altered voice, sound, and the rest, will be heard in a lung solid from pneumonia, and it will be heard equally in a lung solid from any other cause. We come, indeed, from habit to connect particular sounds with particular diseases, when the concurrence of these is very frequent, so that the one irresistibly suggests the other. At the same time we never quite lose sight of the fact that the inference may be wholly erroneous. With pneumonia it is otherwise. "Minute crepitation," we have been taught, "is a direct symptom, having immediate reference to the structure of the part. We cannot too highly value this single symptom, which gives the earliest and surest intimation that such a disease has begun as tends to disorganization and the inevitable loss of life unless quickly arrested by its counteracting remedy." I do not say that this language of Dr. Latham's would be entirely endorsed at the present time, but, rightly or wrongly, we are still under its influence. Often, for instance, in the wards one hears it said, upon this evidence of minute crepitation, that consoli-

dation is impending, and often the result does not so turn out. In such cases we are apt to assume that the natural course of the disease has been arrested by treatment, and thus at once sustain our belief in the uniform progress of pneumonia, and the curative action of drugs.

But there is a more modern view of pneumonia, which tends to exalt the value of physical signs by denying the value of all others: the hypothesis, I mean, that the essence of the disease consists solely in the presence of a solid exudation which undergoes certain changes. This morbid state of the lung, it is asserted, bears "no relation whatever"—meaning, I suppose, no fixed and constant relation—to the symptoms of the individual. Circumstances of temperament or of previous health may modify these indefinitely, so that while the course of the exudation, apart from mischievous interference, is remarkably uniform, its outward phenomena may be anything or nothing. "It would be easy to show," says Dr. Bennett,[1] "that there are many cases where all the symptoms of a pneumonia have been present, but where a post-mortem examination has proved that there was no inflammation of the lungs, and a still larger number where fatal pneumonia has occurred without any of its symptoms having existed during life." It would be impossible to express in stronger language the sufficiency of physical signs to indicate pneumonia, or the utter insignificance of all other evidence.

Now it is obvious to remark that exudations which arise in such various ways are not to be taken as identical, because sometimes at a single point in their history they exhibit the same appearance under the microscope. The future of an exudation is dependent upon the circumstances of its birth and origin, and its nature cannot be recognized until its history is completed. Certainly we know that some exudations lead with a singular malignity to disorganization of the lung, whilst others have no such tendency. Is it to be conceived that this difference is not inherent in the process itself, or that we can know anything of an exudation except by means of the phenomena to which it gives rise?

Assuming, however, the correctness of that pathology which ascribes pneumonia—the local, physical part of it—to an exuda-

1 Treatment of Pneumonia, *Practitioner*, vol. ii. p. 263.

tion, it follows that the distinctive auscultatory signs of the disease are not reached until solidifications of the lung-tissue is made out. Crepitation (the smallest, crackling, equal with inspiration only [1]) must depend upon a condition of the lung short at least of this. Nor is there anything in the character of that sound to show that the exudation is surely coming. But is the further evidence of consolidation conclusive, taken alone and regardless of any other symptom whatever? I think, on the contrary, that the fact of a lung becoming solid without the concurrence of a certain group of symptoms, argues conclusively against pneumonia; for we have a body of facts to show that when an exudation takes place into the previously healthy lung it never does so silently, but always with symptoms of great definitness, and we have an equal body of facts to show that consolidation as a secondary condition occurs often and in many ways apart from all these symptoms, and apart, too, from exudation, considered as an inflammatory product. Allowing even that the consolidation which occurs in the so-called latent pneumonia may sometimes resemble in all anatomical points the consolidation of the simple disease, it is enough to observe that we are without the means to distinguish these cases during life. Pneumonic consolidation is recognized as such by its accompaniments. The likeness, such as it is, of this latent variety can only be discovered at the post-mortem table.[2]

1 It is necessary to be particular in alluding to the characteristics of this crepitation, because Grisolle, in his elaborate monograph, has contended that the sign has been undervalued from its being confounded with the subcrepitant râle. It is with this remark that he dismisses the objections of Andral and Cruveilhier, who asserted that minute crepitation indicated nothing more than capillary bronchitis, a conclusion which the minute anatomy of the lung would seem to render obvious. (Grisolle, De la Pneumonie, p. 474, 2me édit.)

2 I find, upon reference to a recent author, that latent pneumonia "is unattended by the ordinary general symptoms of the disease," and, further, that "the mischief partakes of the character of congestion, resulting in sero-plastic effusion rather than of active inflammation;" in effect, the definition of latent pneumonia is that it is not pneumonia at all. Perhaps the form of expression nearest of kindred with this is "suppressed gout;" both terms imply a condition which means more than it expresses, and whose proper phenomena are lurking somewhere, but by some mysterious agency veiled from ordinary eyes. But "suppressed gout" is obsolete; latent pneumonia, on the contrary, is credited with a large number of deaths, especially amongst infants and old people. (See Dr. Fuller on Diseases of the Lungs, 2d edit. p. 276.)

It is unnecessary to speak at length of any other single symptom supposed of itself to be pathognomonic of pneumonia. No one is likely to propose that the diagnosis of the disease should be undertaken without reference to its physical signs. Yet it may be boldly stated that if the question had to be determined from one symptom alone, the evidence of the sputa would be by far the most reliable. Sometimes, indeed, from this source alone we get ocular proof of a moulded exudation existing in the immediate neighbourhood of the air-cells; but, failing that, the intimate mixture of blood and mucus which gives rise to rust-coloured spitting is an appearance not even imitated when the two come together under any other circumstances. True rusty, viscid, unaërated sputa are conclusive both as to the seat of the lesion and as to its general nature. This occurrence therefore, in conjunction with minute crepitation, cannot but suggest pneumonia; the combination is in fact commonly recognized as indicating its first stage. Nevertheless, if exudation be the essential part of the pneumonic process, it can scarcely be said that these two signs constitute the disease; they denote at most a state of active congestion, which is its immediate precursor. Sometimes, indeed, the so-called pneumonic crepitation, with this accompaniment of rusty sputa, will abide for an indefinite time without pneumonia ever being fully developed. The two symptoms may be present along with a condition of the blood the very opposite of that which is capable of furnishing the true inflammatory exudation. Whilst, therefore, we are warranted under these circumstances in regarding pneumonia as imminent, and acting as though in its immediate presence, we cannot in strictness, if the physical signs go no further than this, admit such a case into our reckoning. It is at best an example of pneumonia arrested at an incomplete stage; and, however satisfactory in itself, is of little practical service, since, as yet, no attempt, statistical or otherwise, has been made to ascertain by what means the disease may thus be strangled at its birth, but only to determine its treatment when fully born and recognized.

The case is different when along with true rusty sputa we have the further evidence of recent consolidation of the lung. Must not this be accepted as sufficient ground for diagnosis? I think so; but I think also that this combination is rarely,

if ever, seen without other signs being also present to place the existence of pneumonia altogether beyond question. It is unnecessary to speak of each of these separately—the fever, the pulse-respiration ratio, the *pose*, the aspect, the cold breath, the marked crisis; none of these things singly constitute pneumonia, yet in each of them there is something distinctive, whilst by their frequent concurrence they signalize inflammation of the lungs as an affection no less remarkable for its definite effects upon the organism than for the local physical changes it produces, as much to be recognized by the one as by the other.

It thus appears that the practical difficulty in pneumonia is confined to those instances in which its characteristic features are more or less modified, or some of them altogether absent. It cannot be that this disease more than any other should have a history absolutely uniform, or that the whole *rôle* of its symptoms should be displayed on every occasion. No rigidity of definition can be applicable in practice to decide the nature of doubtful cases. It may be possible, nevertheless, in an affection exhibiting such special phenomena, to distinguish between accidental and invariable symptoms, or at least to come to some agreement as to what may and what may not be received as pertinent examples of pneumonia in statistical inquiries. With this view it may not be irrelevant to notice both the circumstances under which simple pneumonia is wont to arise, and the connection which can be made out between its physical and its general symptoms.

It need not be said that the most marked instances of the disease occur in previously healthy persons; in these it is found that the onset of the affection is usually clearly traceable to a definite exposure of the body, and of all exposures the one which operates most remarkably is a driving east wind. That is the conclusion to be derived both from the histories of individual patients, and from the season of the year when most cases of simple pneumonia are admitted into hospital. It would appear to be confirmed by the Registrar-General's Reports. It may be gathered thence that the mortality from both bronchitis and pneumonia (in England there is a pretty constant correspondence between the two) rises whenever the wind changes to the east, and the horizontal movement of air is great. In short, so far as I could make out, it would be difficult

to name any other single condition whose influence was so potent. It was found, indeed, as everybody knows, that the summer was more favourable than the winter, but it was not found that very great cold uniformly affected the death-rate nor very great heat; but whenever the wind set from the east, or rather whenever it *blew* from that quarter, the mortality from pneumonia and bronchitis would straightway rise—rise, that is, for a time upon the first shock of the change, and then, though the same wind might continue, the increased rate would gradually fall. We must beware, however, of laying too much stress upon these death returns. Not only is pneumonia a disease of rare fatality under any circumstances, but there are counterfeits of it which, though they assume its name, are often rather the consequence than the cause of death. The connection between bronchitis and truly lobar pneumonia is not an intimate one; so much is admitted by most writers. But the affection which goes by the name of broncho-pneumonia, and which is sometimes pulmonary collapse, and sometimes hypostatic congestion, and always widely different from the disease we are discussing, is almost necessarily associated with bronchitis. Such cases are being registered in London every week, and especially amongst children. The majority of deaths from pneumonia is always in the column relating to infants, and the lobular pneumonia which is usual with them is the most equivocal form of lung inflammation known to us, as well as the most difficult to recognize from physical signs.

There is another cause manifestly influencing pneumonia, which, while it rests upon better evidence than the weekly returns, must inevitably raise an hypothesis which may be true or false—I mean the influence of great altitudes. In such regions, while phthisis is almost unknown, inflammation of the lungs is exceedingly common. The remark appears to apply to high mountain ranges all the world over. Whether or not the disease so named is absolutely identical with true pneumonia, it seems obvious to remark that a diminished atmospheric pressure, together with increased functional activity on the part of the lungs, are conditions which must directly favour the occurrence of an exudation into the air-cells closely resembling the product of the inflammatory process.

But whatever be the exciting cause of an exudation, it is

essential to my present purpose to maintain that it can only be recognized as pneumonia, when along with physical signs we have a train of clinical phenomena which within certain limits are perfectly definite and uniform. It is true, no doubt, that the changes which take place in the lung appear sometimes to be independent, as regards time, of the course of the general symptoms; at least it is not always possible to detect the manner of their correspondence. Not only does the fever anticipate the exudation by an uncertain period, but the latter will sometimes linger long after the crisis, which is so remarkable a feature of the disease, has occurred, and the active stage of the affection is accomplished.

It happens sometimes that the period of crisis is nearly simultaneous with the period at which exudation is completed, as though by this act the energy of the disease, so to speak, were expended, or the end in view thereby accomplished. Thereupon, though the exudation remains, the symptoms which marked its advent disappear at once and forever. They do not abate, they vanish; even the dyspnœa—which of course cannot wholly subside so long as the breathing apparatus is invaded—even this, though it remains the longest, moderates, and the lung accommodates itself to its new condition. By and by, when the exudation begins to be removed, when resolution commences, that occurrence is unattended by any marked phenomena on the part of the system, and might easily escape notice altogether.[1]

If this be so, the event of exudation is the turning-point in the disease, and the time of safety to the patient is not when resolution begins, but when exudation has ceased. It is often, indeed, at this period, that the sudden appearance of typhoid sinking first announces the probability of a fatal issue. The remark has an obvious bearing upon the views of those who would have us watch pneumonia without actively interfering with it, maintaining, with Dr. Bennett,[2] that its progress is to be

[1] This connection between completed hepatization and the subsidence of acute symptoms is particularly insisted upon in a valuable paper upon simple pneumonia by Assistant-Surgeon Welsh, who enjoyed a rare opportunity of observing the natural history of the disease in the 22nd Regiment, on its removal from Malta to North America. (See the Army Medical Reports, 1867.)

[2] "The Restorative Treatment of pneumonia," by Dr. Hughes Bennett, 1861. It does not belong to the present purpose to discuss the pathology of pneumonia,

estimated by the progress of the exudations, and by that alone. Now it will scarcely be affirmed that the physical changes which occur in any case of pneumonia up to the completion of hepatization enable us to predict with any degree of certainty what will be its subsequent history. We may, of course, roughly estimate the degree of a patient's danger by his present condition, but there are no means of distinguishing beforehand between cases which at the critical period shall suddenly revert almost to health, and cases which at the same point shall exhibit for the first time those signs of sinking which are the sure harbingers of death. In other words, it is only by the event that we learn whether pneumonia may safely be left to itself, or whether by so leaving it we surrender the patient to a disease calculated to destroy him. A mode of treatment based upon the hypothesis just noticed has received the name of "restorative." It is not suggested by the advocates of this method that it tends to defer or arrest exudation; on the contrary, the object in view is to support the patient during the progress of certain pathological changes, whose natural tendency, it is affirmed, is towards recovery. Such treatment is admirable for the favorable cases, but the very terms of its statement imply that its application must be strictly limited to these. Nor would this limitation restrict the "restorative" treatment very considerably. Simple pneumonia, excluding the two extremes of life, is not a disease of high fatality. But cases do occur now and then where the tendency is not towards recovery, but towards death—cases in which, though the exudation is fulfilling its usual history, the patient is dying the while. What we seek is a treatment which shall be restorative to these, and no system can be complete which virtually leaves them out of sight. It is true that allusions are made by Dr. Bennett, and others who think with him, to the salutary effect of small bleedings, or the need sometimes

but I may notice, by the way, that Dr. Bennett describes the exudation as being at first molecular, and afterwards, by "molecular coalescence," becoming converted into pus-cells. In no instance, however, have I succeeded in discovering this molecular exudation present by itself, or any appearance to warrant the belief that the pus-like cells are built up out of this molecular material in the manner described and figured by Dr. Bennett; I think the exudation must contain them from the very first; that they must pass out of the blood into the air-cells. (P. 50, *op. cit.*)

of direct stimulation by alcohol. While the fact may be noted as an unwilling admission on the part of these writers that active interference may now and then be necessary, it must be added that the direct effect of these measures is never allowed its proper weight; they are mere adjuvants to the "restorative" treatment, they are never themselves the means of saving life. Yet is it not obvious that bleeding or active stimulation will never be resorted to by these physicians except on the ascertained failure of their "restorative" method, and that the employment of these means is not to be regarded as supplementing such treatment, since it plainly contradicts the hypothesis upon which it is founded?

Dr. Bennett's success with pneumonia seems mainly due to the fact that he does not permit his treatment to be too closely fettered by his argument.[1] It is unnecessary to repeat now what has been said elsewhere against the conclusions of his statistical tables. Every one who has attempted the task must be aware of the extreme difficulty of including every necessary particular in thus bringing a multitude of cases under one point of view. It was essential to the purpose that the tables should comprehend a large number of persons who must have recovered under any treatment whatever, and it was inevitable that a large number should not in strictness be illustrations of any particular treatment from not coming under observation until late in the disease; thus of 125 cases there are at least 53—excluding four undated—which were not seen till on or after the sixth day. I would rather take exception to the cases on the ground that they are of a heterogeneous kind—sixty-eight only were in good health to start with—linked together owing to a community of auscultation signs, and that we are not told in any one instance what was the nature of these sounds.

In considering the circumstances of fatal cases of pneumonia, the question may well occur whether death is always inevitable; is it not rather reasonable to hope that we may one day be able—even, it may be, by following some very precise system of drug treatment—to save more lives than at present? The condition of the patient seems to be one which it is within the pro-

[1] *E. g.* Case 116, "Saved by ʒ ss of wine every half-hour."

vince of drugs to ameliorate: could we relieve, for instance, by blood-letting or otherwise, the venous congestion, or stimulate directly the action of the right ventricle, or even arrest the exudation by means of alkalies, as it seems possible to do in pericarditis? Every one, in fact, has his own method of encountering extreme cases of pneumonia. Dr. Bennett, as we have seen, relies upon alcohol, others have spoken highly of chloroform, and many retain an unshaken faith in the power of antimony. Concerted observations upon the results of treatment, when circumstances thus imperatively demand active measures of one kind or another, are much needed; they might fitly supplement the labours of those who have succeeded in showing that pneumonia, as a rule, does best without the aid of drugs. It is vain, however, to set about any such inquiry so long as the word retains its present wide signification, and latent pneumonia is allowed a place in our nosology. Inflammation of the lungs, that it may be known as such, and distinguished from other exudations physically like it, must have its own proper symptoms. The burning skin, the diminished chlorides in the urine, the marked crisis, the posture and aspect of the patient, all of these, equally with the physical signs, are integral parts of the disease. Subordinate to these are such symptoms as rusty sputa, or great perversion of the pulse-respirations ratio. These things belong, indeed, to pneumonia, but it is easy to see that their absence implies nothing more than a modification in the degree of it. A certain margin of variation must be permitted to every disease, and it is always possible, by a comparison of cases, to distingush essential from non-essential symptoms. But it must ever be insisted that pneumonia is not an anatomical condition but a substantive disease, and that it is impossible to separate its pathological from its clinical part without altogether destroying its identity. However words may change—and there is little reason to cling to this one—we may rest assured that a combination of phenomena so definite and so striking will always deserve a name of its own. Consolidation of the lung, on the other hand, has such various associations that it can serve no useful purpose to group diseases together only because they share this condition in common.

I would only add, that if these remarks are true at all, their

application need not be confined to pneumonia. Morbid anatomy can never be the sole basis of medical practice, nor can the physician of the present day afford to neglect those signs of face and pulse and posture which are its living interpreters, and whose language is not the less valuable to us now because of old it sometimes misled those who had to trust to it alone.

ON THE VALUE OF A LARGE SUPPLY OF FOOD IN NERVOUS DISORDERS.

BY G. FIELDING BLANDFORD, M.D., OXON., F.R.C.P.

Among the various therapeutical agents and innumerable drugs advocated and employed for the relief of nervous weakness, and the cure of the disorders which thence arise, it is possible that the unaided effects of food may not in all cases have met with the trial they deserve. Patients thus afflicted are told to live well and adopt a generous diet, but the generosity of this is usually estimated by the amount of port wine or other alcoholic stimulant, rather than by that of the bread, mutton, or beef.

Certain chronic invalids who have been brought under my notice have been lifted out of their former condition of "nervousness" by a large increase in the quantity of their food. They have been people suffering from some general neurosis, taking the form of an insanity of a low and depressed character, or hypochondriasis, hysteria, alcoholism, or neuralgia, affections closely allied one to another, which may be witnessed in one form or other in individuals inheriting the same neurotic temperament. We may see different members of the same family displaying one insanity, another neuralgia, a third hypochondriasis, while the conversion of one variety into another is a matter of every-day observation.

A paper on "Indiscriminate Stimulation in Chronic Disease," from Dr. Anstie's pen, appeared in this journal in July last. With all that he says I cordially agree, and more on this portion of the subject need not be urged at present. It is a matter of the gravest importance that the treatment of such cases should not be conducted by means of unlimited supplies of alcohol.

If we inquire into the past history of nervous patients, and have the opportunity of learning accurately the facts thereof, we often find that for a considerable time the supply of daily food has been in no degree adequate to the necessities of the individual. Here is a common case. A man somewhat past middle life, but whose years do not imply senile decay, becomes unfit for business, fidgety, irritable, depressed, or even melancholic to the extent of insanity. We hear that he has been a hard-working man of business, always nervous, and very probably an indifferent sleeper. Being most heavy for sleep in the morning, he has risen at the latest moment, and, snatching a mouthful of breakfast, has hurried off to catch the train or omnibus, worried and anxious lest he fail to reach his office at the hour appointed. At lunch-time, if he be really hard-worked, he takes, not a meal, but a sandwich or biscuit, eaten perhaps standing, and often bolted in so great a hurry that digestion is difficult; he tells us that he dare not take more of a meal in the middle of the day, for he would be rendered unfit for the remainder of his work. In the evening, with what appetite he may, he eats his dinner, perhaps not before half-past seven o'clock. Now, granting that his dinner is amply sufficient, such a man lives on one meal a day with very little besides. These are the persons who cannot go on without frequent holidays; nervous by inheritance, they break down because they are insufficiently fed. A holiday, during which they live better, builds them up again for a time, again to break down; often to fall into the condition above-mentioned. Another class among whom we may frequently witness the same result and corresponding symptoms are the clergymen who for various reasons deny themselves an adequate amount of food. Either they fast rigidly, according to the rule and doctrine of the day, often allowing some hours to elapse before they break their fast, or they think that hearty eating is a snare and a carnal enjoyment, or they hold it sinful to eat their fill while others are in want. Whatever the cause, certain it is that many of the clergy break down in one or other of the forms of nervous disorder already enumerated, and an enlarged dietary is to them a necessity. A vast number of women, for one reason or other, take a very small supply of food: some think it unladylike to eat heartily; some eat on the sly, and when this is

not practicable go without. Many from the lives they lead are doubtless correct in saying they cannot eat because they have no appetite. These stay in the house from month to month, or never venture beyond the door except in a carriage, because ladies do not walk in the streets. Others have misgivings on the score of their digestion. Like many women who lead sedentary lives, and habituate themselves to passing long periods without action of the bowels, they suffer greatly from constipation, which is looked upon as an indication and a warning that they ought not to eat. So they starve themselves, and fancy that if they abstain from food it is of little consequence whether they pass a motion once a week or once a fortnight.

It may be well to consider somewhat more in detail the various neuroses which have been mentioned.

The first on the list is low nervous depression, commonly known as melancholia, the most formidable of all that have been named, the one most likely to run in a short time into serious and even fatal insanity, but which, if arrested at an early stage, is often singularly amenable to treatment. In almost every example of this variety, and almost from the commencement, we find a marked disinclination to take food, and in extreme cases it can only be administered by some kind of forcible feeding. In milder cases, and at an early period, it will be taken if we insist upon it, and the result of a large supply is frequently manifested in a very brief time. It has been asserted by many writers that refusal of food on the part of melancholic patients is due to dyspepsia, and in confirmation of this opinion they point to the foul and furred tongue, the obstinate constipation, and the fœtor of breath so constantly observed in such patients; but this condition of the tongue and fœtor are due, I am convinced, not to gastric disturbance, but to the generally depressed and devitalised state of the individual; and the best proof of the absence of dyspepsia is that, although we suddenly compel the ingestion of what, compared with that previously taken, may be called an enormous quantity of nourishment, the stomach by no means rejects it, but, on the contrary, retains and digests it, as is shown by the rapid amelioration which takes place. It is inconceivable that dyspepsia can be the cause of refusal of food when the administration of it is unattended by sickness or inconvenience,

even when that which is taken into the stomach is not light invalid diet, but such substances as beef or mutton. From my own observations, and from the subsequent confession of patients, I am inclined to believe that the refusal of food is in almost every case the result of delusion, this being in turn the result or interpretation in consciousness of the extreme nervous depression and exhaustion under which they are labouring. They are too wicked to live, too wicked to eat; it is sinful to pamper their flesh and their appetites; they beg for cold water and dry bread, but the idea of a good dinner their soul abhors. If we see such sufferers at an early stage when forcible feeding is not necessary, and they will take that which is ordered, merely protesting against the uselessness or wickedness of the proceeding, we may prescribe a very large amount of food without fear, nay, with a confident expectation of the greatest benefit. What the food is to consist of is a point on which little need be said. It is not necessary to adhere to a sick diet,—to beef-tea or boiled mutton, to essences of beef or Liebig's food, or any other of the concentrations so loudly recommended. The ordinary diet-list of the individual in health may be given without hesitation—fish, game, poultry, meat, puddings, and the rest. His appetite should be stimulated by variety, and his dishes may be savoury as well as wholesome; but the supply must be large. Such patients for the most part have accustomed themselves to eat during the day a scanty and insufficient amount, and we shall be told that latterly they have not taken half their usual quantity. It is not too much to say that they require double that which they have so long taken; and as we shall not be able to induce them to eat double the quantity at a single meal, it will be necessary to multiply the number of the meals. Instead of breakfast, lunch, and dinner, two of which have probably been but the semblance of a meal, we may institute a series of feedings after this kind: first, something may be given early in the morning, before the patient gets up, as rum and milk, egg and milk, chocolate or *café au lait*. This will be useful in allaying the feeling of extreme depression and dispelling the gloom and suicidal thoughts so constantly present on first waking. Next, breakfast may be taken, after dressing, and between it and a two-o'clock lunch something else, as beef-tea or a sandwich. The

dinner-hour should not be later than six, and at bedtime some light kind of supper should not be omitted. By this kind of division, food may be administered six times in the day; and if the patient wakes in the night, and is restless and nervous, and disinclined to sleep again, food, taken even in small quantity, will often bring back sleep. With all this food may be given a reasonable amount of wine, or wine and stout, and this not by way of curing the disorder by stimulants, but because in conjunction with them less food appears to be required, and also because the addition of some wine or beer often renders the taking of the food more easy to the patient.

Now the latter, and it may be the friends, will protest loudly that it is impossible to take this quantity: he will assign every conceivable reason for avoiding it; but if we are firm and insist, and, if necessary, cause him to be fed with a spoon, he will retain and thrive on it, and in a few weeks, or even days, will show very marked signs of its good effect. Patients have recovered under this treatment in a singularly rapid manner. Some learn in a short time to appreciate the benefit of the food, and miss their meal if from any cause they are unable to take it at the appointed hour, and some have gone on for years after their recovery taking, not the quantity prescribed during the acute stage of their illness, but one very much larger than that on which they had endeavoured to live for so long, and under such a change of regimen have lost all trace of the depression and hypochondria from which they formerly suffered. Although beef-tea, chocolate, and milk have been mentioned as articles of diet, it by no means follows that liquids are to predominate: on the contrary, solid food is far better as a sedative, and also far more nutritious, and it may be taken as in health. Much has been said concerning the advantage of fatty food in nervous disorders, and sugar has been thought to disagree with these patients; but in my own experience I have found that all the various foods—the fatty, the starchy, sugar and meat—may be given in due proportion at any rate to the individuals now under consideration. If this amount and description of diet be administered, there will be little need of medicine, except perhaps of morphia or chloral to procure sleep at the commencement of the treatment.

The next variety of neurosis in which the efficacy of abundant food is markedly shown is alcoholism, whether acute or chronic. I shall not here enter upon the question whether delirium tremens is ever caused by the removal of alcohol; controversy upon this point is not yet at an end, and it will exist so long as we are ignorant of the precise pathological cause and condition of delirium. But whether alcohol is to be entirely avoided or not in the treatment of this disease, it is, I believe, an established fact that abundant nourishment, not spoon diet, but solid food, should be given as soon as the stomach can retain it. The irritability of the latter is a difficulty to be met in various ways, and owing to this we may at first be obliged to resort to concentrations of food; to Liebig's extract, various preparations of beef-tea, and so on. It would appear that sleep is far more easily procured, and medicines given for it are far more efficacious, if an abundant supply of nourishment is administered at the same time.

It is rather, however, in chronic alcoholism that the good effect of food may be witnessed. Here it is often of the greatest consequence to abolish alcoholic stimulants entirely; in fact, in such abolition lies the only hope of effecting the reformation of the chronic drinker. The intense sinking and craving for the accustomed stimulus may often be effectually met by food, especially if a small quantity be given frequently, as recommended already. Such patients are unquestionably most difficult to deal with: they assign reasons of all kinds for rejecting food, and for being treated by their favorite remedy. They are faint, they require support, they suffer from stomach ailment, from pain, from want of appetite, nausea, or sinking; but they rarely vomit that which they take if drink is withheld, and this is a tolerably sure sign that the stomach is equal to the digestion of the food. The symptoms of alcoholism need not be here described; but whether they be the transient and immediate results of a heavy debauch, or the graver signs of commencing degenerative change of the nerve-tissues, which runs on to alcoholic paralysis, epilepsy, or dimentia, food is equally demanded, and is in fact the one thing which can arrest this degeneration by supplying nutritive elements in large quantities. The recovery in such cases is often astonishing. I lately saw a

young man who for many weeks was completely paraplegic, but who nevertheless entirely regained the use of his limbs. The recoveries, too, from alcoholic dementia are often equally surprising; in fact there seems scarcely any state from which recovery may not take place if the disease has not existed for a long period, and if we are able to withdraw all alcohol, and administer nourishment in large quantity.

There are a number of people whose nervous temperament displays itself in symptoms which are called in common parlance hysterical or hypochondriacal. While young they are termed hysterical, especially if they are women; when older they are known as hypochondriacs, and their nervousness then takes for the most part the form of depression and anxiety, or even suffering, on account of some fancied bodily disorder. Now, although hysteria is held by some to be peculiar to women, and discussions are raised as to whether the seat of it is in the womb or the ovaries, or elsewhere, it is, I think, a fact that there is the closest connection between these two neuroses; that hysteria may be converted into hypochondria; that the condition of many patients would be as well described by the one term as the other, and that the subjects of both the one and the other may be of either sex.

Few of these will be found to take an adequate supply of proper food, and those who take the least will present the most distressing symptoms of their disorder. The hypochondriacal direct their attention to the digestive organs more frequently than to any other region. They suffer from constipation, flatulence, and a host of other evils, and for this reason either shun food, or eat most unwholesome and extraordinary combinations irregularly or at long intervals. Hysterical women—I am not now speaking of young girls—are especially prone to eat irregularly; to take food, if possible, when unnoticed; to eat altogether a very inadequate quantity, and to eke it out by an inordinate proportion of stimulants. If we look at such, especially the hypochondriacal, their whole aspect betokens innutrition. Often they are miserably thin; if they are given to drink they may be fat, but their flabby tissues speak of low organization and defective power. It is evident that the nervous energy of such people is very low; this is manifested by their mental

depression and disturbance, and the defect must be supplied from some quarter or other. But whence can a supply of force come except from the material of food taken into the system by the alimentary organs? Moral measures are, it is said, and said truly, essential to the recovery of such persons. But moral measures constantly fail, because the bodily health does not allow of mental improvement, and is not *pari passu* attended to. As in more marked mental aberration no amount of argument, proof, or moral suasion will expel a delusion which vanishes of itself when bodily health is renovated; so change of scene, of persons, and moral treatment of every kind, will fail with the hysterical or hypochondriacal so long as they try to live upon physic or alcohol, or upon a diet almost devoid of nutritive elements.

It may be objected that some hypochondriacal patients eat, not scantily, but enormously, taking more than is necessary for a person in health. Such are to be found, but in my experience they are the least to be pitied of their class. Though nervous about themselves, and prone to take notice of the slightest indication of anything they may think an ailment, they are not generally depressed or unhappy, but, after a fashion of their own, they exert themselves, and enjoy life. Such people, I believe, take this amount of food from a feeling that is to them a necessity, and thus they keep at bay the graver nervous disorder which perpetually threatens them, and the matter of alcoholic stimulants they rarely exceed. Food is to them a stimulous, and were it withdrawn they would speedily show signs of more serious mental mischief.

The only other subject on which I propose to say something is neuralgia. It is obvious that any observations upon it must be of the widest and most general character, and that no account can be taken of the special forms of this neurosis, or of any pathological changes connected with it. Believing with many others that neuralgia is one manifestation of impaired sensibility, as other neuroses may be displayed in mental symptoms, and in these alone, I think that the radical cure, and not the mere alleviation, is to be found in many cases in the supply of a large amount of nutriment to the nervous system. The confessed failure of drugs in the case of neuralgias, and the mere temporary

alleviation by such methods as hypodermic injection, inhalation, or a dose of alcohol, point to the necessity of some more general mode of treatment, which shall effect a greater change in the functions of the nervous organs. Those whose experience is greater than mine speak highly of the utility of fatty food, of cod-liver oil, cream, butter, and the like. Whatever the form of food specially indicated, it generally will be found that the entire amount requires to be increased, and that the quantity taken for a series of years has been deficient. It may be that the alimentary system of elderly persons will be found incapable of assimilating the requisite amount. On the intractable nature of the neuralgias of the aged, nothing need here be said.

With two remarks I will conclude. First, in all chronic forms of neurosis, alcoholic stimulants in any but the smallest quantity are a hindrance rather than a help—are productive of evil rather than of good. Secondly, in such disorders the fear, so commonly entertained both by doctors and patients, of "overloading the stomach," producing "biliousness," and the like, is in the majority of cases not realized when the plan of administering food in large quantity is tried. Great opposition will be offered by patients, and every kind of evasion attempted. They will swallow bottles of medicine far more willingly than they will eat sufficient meals at regular intervals. To induce them to do this is often a difficult task, and here moral handling is required. If this is judiciously applied to the patient and the patient's friends, some very remarkable results may be attained.

ON BLOOD-LETTING IN CERTAIN FORMS OF EYE-DISEASE.

BY ROBERT HAMILTON, F.R.C.S.

Surgeon to the Southern Hospital, Liverpool.

THE disuse into which the abstraction of blood has fallen of late years becomes more and more noticeable each year, and in this country it probably never was so seldom had recourse to as it is at the present time. It may almost be said to have passed out of the category of remedial agents at our disposal, so generally has it become the fashion to ignore it, notwithstanding the efforts of a few writers who still in the latest editions of their works continue to recommend its employment in certain circumstances.[1]

It may therefore be doing good service if it can be shown that there are certain cases in which the abstraction of blood is not only a successful mode of treatment, but that there is not any other which can be substituted for it with equal benefit. Each of these points seemed to me were proven in the cases about to be related. The fact that they are all of one class, namely, affections of the visual apparatus, will not weaken the protest here made against blood-letting being set aside, because some of the parallel functional disturbances occurring elsewhere would be just as amenable to a like treatment. It is necessary to say, I make no attempt to revive the heroic blood-letting of our fathers' times; such an attempt would doubtless be futile, as experience has fully established the soundness of the present teaching of the schools, namely, a limited and almost rare recourse to blood-

1 From inquiries made at several of the large dispensing houses in this town, I find that the demand for leeches has dwindled down to a mere tithe of what it was ten years ago. At most of the hospitals and dispensaries they are so rarely required, that they are not kept in stock at all, but sent for when ordered. As for cupping and bleeding from the arm, they are never heard of now.

letting. It is only to point out the mistake which will be made if it is altogether lost sight of or omitted from our therapeutics, that the following cases are recorded, with the thoughts they suggest. For the purpose of not wearying the reader, only those particulars are given in the history of each case which bear upon the treatment pursued.

Case I.—A cook, aged 28, residing at Southport, exposed to great heat. For three weeks had suffered from constant headache, with pain in the ball of the right eye, the sight of the eye being much affected. Took purgatives, and applied cold bread poultices to the eye. Feeling no better, came to me, December 30th, 1869. I found she could with difficulty decipher No. 19 Jäger's types with the right eye, and only No. 10 with the left. The latter eye presented no external abnormal appearances, but the right had a slight patch of ecchymosis under the conjunctiva, upon the outer side, and the pupil was more dilated than that of the left. Ophthalmoscopic appearances: extreme vascularity of the optic disc of right eye, amounting to a redness, which appeared uniform with the adjoining choroid, and the vessels of the retina largely dilated. The treatment: four leeches to the right temple, a shade over the eyes, and an evaporating lotion to the forehead. She was also ordered to avoid the heat and glare of the fire. On the 6th of January the leeches were repeated. An improvement took place immediately after the first leeches were applied. Her expression was, that it seemed as if the bleeding lifted off a cloud from her eyes. At the end of a fortnight the pain in the head was gone, and the vision completely restored.

Case II.—M. G——, aged 38, married, residing at Chester, consulted me on February 3d. Had good sight up to a fortnight previously, since then vision had rapidly failed, so that at the time of applying it was found she could not decipher No. 20 Jäger with the left eye, and No. 18 but indistinctly with the right. She had constant pain and weight in the head and temples, and sick feeling at the stomach. Her face and forehead were flushed, and tongue coated. Externally there was nothing observable about the eyes, beyond the pupils being somewhat dilated and immoveable. No suffusion, photophobia, or lachrymation. The ophthalmoscopic appearances were the same

in both eyes. The optic disc swollen, small extravasations of blood on the vessels of the retina, and hyperæmic condition of the latter. The treatment: four leeches to each temple, purgative medicine, and cooling lotion to the forehead. Upon her return at the end of a week there was marked improvement, and she stated that the relief given by the leeches had been immediate. She was told to continue the lotion, the low diet, and the medicine. During the following week, not finding the improvement in vision to be progressive, she applied six more leeches. At the end of a fortnight I saw her again; she was now able to read No. 2 of the types with either eye, the pupils acting much more freely, and the pain in the head was gone. I saw her for the last time on March 14th, when she was quite well, and sight completely restored.

Case III.—J. R——, aged 25; steward. Eye-sight good up to Christmas, 1867. At that time he was in Melbourne, having arrived out about four days before. He was standing on board a lighter, tallying some goods that were being removed from the ship. The weather was very hot; he turned faint and giddy, made an effort to get on board his ship, and in doing so fell down insensible, and remembers nothing more for an hour or so. He had been drinking rather heavily before the occurrence. When he came to he found his sight "gone a good deal." Ten days after he had another fit, having continued to drink in the interval. His sight was more defective after this; he could not see to write or perform his duties. His face looked to himself in a looking-glass like a black shadow. Previous to this voyage his nose used to bleed frequently and freely; even the application of cold water to his face, in hot weather, made it bleed; but it had ceased to do so for some time. He arrived in Liverpool in May, 1868, with no improvement in his eyesight, not having had any treatment all that time. He at once placed himself under the care of an ophthalmic surgeon, and continued under his care for a year and a half, during which time he had a seton in his neck for five months, the application of cold water to his head and temples, by placing his face under the tap three or four times a day, and various medicines.

I saw him for the first time in September, 1869, when he stated there was little or no improvement in his sight. He had

never lost the pain and weight in his temples. He felt, if it was not for the pain, as if he could sleep all day long. His general health was good; he was stout and strong-looking. He had the amaurotic stare, with somewhat dilated and immoveable pupils. He could only make out here and there a letter of No. 20 Jäger with either eye. The opthalmoscopic appearance may be described as complex in both eyes; for whilst the lower half of optic disc looked ill-defined and swollen, with the vessels proceeding from it enlarged, and extravasations dotted upon them, the upper margin of the disc stood clearly defined, and the arteries were pale and shrunken.

The treatment consisted of three leeches to each temple, repeated every ten days for six times; cupping on two occasions to the extent of about four ounces. The third application of the leeches removed to a great extent the pain in the head. On December 30th his condition was as follows: he had entirely lost the pain and weight in forehead; he felt lighter, and better, and much stronger than before the bleedings; he made out most of the words of No. 12 types. At the present time, April 12th, he keeps fully as well; is not able to decipher any smaller print than No. 12, though he does that now with greater ease.

In this case all the good that can be done by local bleedings has probably been effected, and the atrophic changes which have occurred in the optic nerve and in the retina, from the long-continued congestion interfering with nutrition, might only be aggravated by a persistence in such treatment.

Exposure to the glare and heat of the fire, to a more than ordinary degree, was the exciting cause in the first instance related. In the next a too free use of stimulants was, I believe, the cause. In both the functional disturbance, though differing in degree, was the same, namely, a temporary engorgement of the vessels of the part, paralysing nerve action; or to reverse the statement, the nerve action being paralysed by excessive heat, or exhausted by over-stimulation, led to a temporary engorgement of the vessels, and the result was defective vision and pain in the region affected. In the third case exposure to the intense heat of the sun, added to previous intemperance, produced an attack almost resembling sunstroke, which was followed by partial blindness, for which no treatment was adopted for months.

Structural changes necessarily ensued. The long-continued choking up, as it were, of the capillaries and small vessels interfered with the perfect nutrition of the optic nerve, and atrophy of a part of the nerve-fibres is the consequence.

The first two patients were cured because treated in an early stage, and not only were the causes removed, but the actual distention of the part was relieved, before its continued existence had entailed abnormal action in the optic disc, retina, or choroid.

The great value of such cases consists in this: that the *modus operandi* of a particular form of treatment can be traced in them. The process which is set up when blood is being abstracted from a part is probably something of the following nature. By suction the blood is drawn from the capillaries, venules, and, arterioles in the immediate proximity to the bite or opening made, so that these would be soon emptied of their contents did not the vessels of which they are the radicles keep up the supply, and these again are furnished from more remote and larger ones, and the latter from still more remote and larger vessels; so that, suction or depletion going on, the engorged part, though at some distance, is soon called upon to contribute its share towards making good the vacuum. Thus there is established, for the time, a current in a new and opposite direction to the normal one, in all the vessels affected by the suction. That is to say, from the moment the bleeding commenced to divert the current, to the time when the circulation is re-established, not only is there a suspension of their functions in these capillaries, venules, and arterioles, but it is not going beyond a fair inference to conclude, that the interval is occupied by the walls of those vessels which have been preternaturally distended in contracting and collapsing when their lessened contents enabled them to do so. We have thus the following state of things induced by local bleeding: a reversal of the current from its normal course in the neighbourhood of the puncture, and the escape through the latter of the blood, and further on, the *vis a tergo* being withdrawn or diminished, a retrograde course of the blood occurs; it goes to swell the stream escaping from the puncture. As the blood continues to escape, the area in which this new action is set up becomes wider and deeper, and very soon involves the part where a disordered condition of things exists.

This may be the mode in which the engorgement is gradually, removed, but another explanation is also very probable, namely, that the supply of blood to an engorged part ceasing, or at any rate being greatly diminished during the time that abstraction goes on, opportunity is afforded to the capillary walls and to the arterial and venous coats to remove their stagnant contents; over-pressure, in other words, no longer interferes with the performance of their functions, and as living tissues they at once resume their assigned action.

Among the difficulties in the way of these explanations, the following has been most frequently started. The larger trunks in the neighbourhood of the puncture, with which the smaller vessels communicate, would probably altogether supply blood to replace that abstracted, without interfering in the slighest with the current of the circulation a little distance off. The answer to this will be made more clear by considering the action set up by the bleeding in the three cases described, where an engorgement of the smaller branches of the opthalmic artery, and of the intermediate capillaries, was presumed to exist. The leeches applied to the temple drew blood from the branches of the temporal artery, consequently from this vessel also, and from its parent stem, the external carotid. At the point of bifurcation of the common carotid into the external and internal, the stream of blood is so powerfully drawn into the external by the exhausting process going on, that instead of the same amount of blood entering the internal carotid, probably not half the usual quantity passes into it, as long as the depleting process in the temple is kept up. The result of this is that the ophthalmic artery, the first large branch of the internal carotid, quickly participates through all its ramifications in the lessened supply of blood. Following out the thought, we perceive that the ophthalmic vein, with all its contributories, would have obtained a diminished supply of blood in the cases related, had not there existed an overplus upon which it could draw, and so remove, whilst the current was in abeyance.

The more difficult question to answer is the next. How can the very temporary diminution of the supply, supposing the above explanation to be correct, followed, as it so soon is, by a return to the ordinary course of things, be productive of any

permanent change in the part? For answer, I would fall back upon the marvellous rapidity of absorption, and say that by its means the *vis mediatrix naturæ* quickly works up the surplusage of raw material, and so readjusts the balance, if we aid and abet her by lessening, even for a short time, the supply, provided that it is merely a condition of excessive vascularity, and no great structural changes have occurred.

ON THE DIETETIC AND MEDICINAL USES OF WINES.

BY THE EDITOR AND STAFF.

PART I. ON THE PLACE OF WINES IN THE DIET OF ORDINARY LIFE.

(*Continued from* p. 296.)

In our last paper we spoke of the natural *acidity* of wines chiefly from the point of view of indicating the limits within which the presence of this quality is not a mark of unwholesomeness in a beverage intended for healthy adults. It would be a serious omission, however, did we not show that the free acids, provided that they are present only in the several proportions which have been already indicated, are far more than merely harmless in their action.

It is a singular thing that while the tonic powers of mineral acids, as used in medicine, have obtained universal recognition, the no less remarkable tonic qualities of the vegetable acids which are essential ingredients of a variety of foods which we consume in ordinary life should have been so slightly dwelt upon: one can only ascribe the fact to the vicious conventional tradition which habitually separates the action of foods from that of medicines. The value of acetic acid has, indeed, been practically confessed in the popular use of vinegar as a so-called condiment; in plain language, a tonic to the function of primary digestion; and a more profound and important action of this substance on the organism is indicated by the empirical observation of numerous physicians and travellers, that vinegar is an antidote of no mean power to scurvy.—An equally decided instinct to that which makes men crave for sour pickles, makes them crave also for sour fruits; and it is certain that a moderate use of these things powerfully aids

primary digestion, more especially in the condition of digestive languor which is apt to prevail during the height of summer weather. Moreover it is probable that malic and tartaric acids, which are the principal representatives of vegetable acid in natural wines, are able to exert a real influence on secondary assimilative processes, since, like acetic and most other vegetable acids, they are converted into carbonic acid in their transit through the body; and the same holds good of that further proportion of these acids which exists in wines under the form of *salts*. On the whole, however, it may be presumed that the useful functions of such quantities of free acids as are found in natural wines are limited to their tonic stimulant action upon stomach-digestion. And that this must be a powerful action no one will doubt who has systematically observed the effects of acid (but otherwise sound) wine in restoring appetite and digestion from the state of prostration in which they are often left after an acute illness.

4. Closely connected in the minds of most persons with *acidity* is the quality of *astringency;* and indeed the latter might be plausibly regarded as a branch of the former subject, since a vegetable acid, the *tannic*, is its chief cause. But, in the first place, the astringency of wines is essentially different from their mere acidity in its effects upon primary digestion; and secondly, there is the important physiological distinction between tannic and the other vegetable acids of wine, that it does not undergo conversion to carbonic acid within the body.

To say the truth, tannic acid, with its peculiar so-called astringency, is the real culprit in many cases where a natural red wine of low alcoholic strength is accused of "acidity." The impression of *roughness* on the tongue is easily confounded with actual sourness. Tannic acid in wines is almost exclusively the product of grape-skins and stones, not of grape-juice. And hence it is only in red wines that it exists in any high proportion; the maximum is found in *young* dark-coloured wines, for in process of time the tannin precipitates along with an albuminoid matter, which is a notable constituent of such wines, especially when they have been only partially fermented. The colouring matter also precipitates with the tannin, and hence an old port-wine becomes "tawny." If any one wants to know

what the astringent element of wine is, at its worst, he must taste some of the dark purple wines of the Valais, or of North Italy, quite new. Generally speaking, the tannin element of wine may be said to be neutral as regards its influence on persons in ordinary health. But there are wines to be met with, here and there, which when young contain enough tannin to set any ordinary tooth on edge, and to upset any ordinary digestion. We remember with horror such a liquor which we once drank at a roadside station in crossing the Simplon, and which produced the most violent diarrhœa. This wine, which was a very cheap sort, of a dark purple tint, rough-tasting, but not sour, had probably been fermented not only with the grape-skins and stones, but also with the fruit-stalks; and as it was very new there had been no time for the tannin to deposit.

On the other hand, the astringent qualities of red wines may become very valuable in certain morbid conditions. But this consideration does not come under our present subject; and we may take the opportunity, here, of remarking that a great many erroneous statements have been made in recommendation of the highly tannic wines for a daily drink, on account of their "bracing" qualities. It is only in certain limited conditions of *disease* that the tannic element of wine possesses any value: and it may be feared that doctors have inflicted much useless misery on unoffending persons, who were not ill, but merely delicate, by recommending them to drink repulsive liquids, which turn the tongue to leather, on account of an imaginary "robustness" of the latter. There is no need for this.

5. We pass now to the consideration of the *salts* of wines.—The importance of the saline constituents of wine was recognized very early in the history of chemistry; in fact, the "tartar" of wine was regarded with almost mystic reverence by physicians and chemists from Paracelsus onward, and we see traces of this feeling even in the pages of a sceptical and, for the times, enlightened pamphlet published by "A Fellow of the College," in 1724, and entitled "The Juice of the Grape, or Wine preferable to Water." Modern physiological chemistry assures us that there is a sound basis for this belief in the importance of wine-salts. The combinations of alkalies (more especially of potash) with vegetable acids, which every natural wine contains, are of a

dietetic value not to be easily overrated; and in the particular function of warding off *scurvy* and some allied diseases of malnutrition, they rise to the highest importance.

It has been already said that tartaric acid is a prominent ingredient in the majority of natural wines; but it is not only present as a *free* acid, but largely also in combination, as acid tartrate of potash (cream of tartar), and to a smaller amount, as tartrate of lime. There are also chlorides of potassium and sodium, phosphate of lime, and traces of silica and magnesia, besides other occasional salts. The above is a list of the characteristic saline ingredients of wines.

Among these various saline ingredients there is none other so characteristic of natural and unadulterated wine as the acid tartrate of potash; this is especially the case with the wines of Bordeaux. For instance, of four samples of Bordeaux wine already referred to in a previous paper, we find the total *ash* (left after evaporation, and incineration of the residue) amounted to 2·35, 2·08, 2·23, and 2·00 parts per thousand respectively; of this total, 0·45, 0·66, 0·41, and 0·38 respectively, consisted of *carbonate* of potash, the representative of the *tartrate* in the wine. In Rhenish wines there is also much tartaric acid, but a larger proportion of it is in combination with lime than with potash. In port wines, when new, there is a high proportion of tartrates, which tend to deposit with age.—But in sherries as sold, even when new, there is a remarkable deficiency of tartrates, which requires special comment, because it is not a natural feature of the wine, but a result of a special process of adulteration which is, unfortunately, universal.—Sulphate of lime (in the shape of plaster of Paris) is employed in the manufacture of these wines, with a view to precipitate the tartaric acid and the albuminoid matters; the result is strikingly manifest in the character of the ash left by the wine after evaporation and incineration. Of four sherries analysed the total ash was found to be as much as 4·50, 5·15, 5·50, and 5·13 per thousand parts respectively; but of this large ash only 0·07, 0·10, 0·14, and 0·07 consisted of carbonate of potash, the representative of tartrate in the wine. That means, that the wine is by the "plastering" strongly impregnated with sulphate of potash, a serious evil, for sulphate of potash is a very depressing

salt, and its effects might materially interfere with the stimulant action of the wine, and doubtless does so, except in the case of the old bottled sherries, which have counterbalancing virtues of their own, to be presently noticed. It may be said, also, in general terms, that any attempt to rob a young wine of its tartaric acid and tartrates is a mistake of the most serious kind; for the presence of these substances really tends to keep the wine in good condition, and their premature removal decreases the chance of the liquor keeping well, not to mention that it abstracts a valuable nutritious ingredient for which, in its youth, the wine possesses no compensating advantage. It is to be feared that the same objectionable process of "plastering" is also followed in the case of several Greek wines, since it is difficult, otherwise, to account for the high percentage of sulphate of potash in the ash of these wines, and the low percentage of carbonates.

On the whole, we are inclined to believe that of all the saline ingredients of wine, the only ones which seriously influence the organism, and possess a real dietetic value, are the tartrates of potash and of lime, and possibly the phosphates of lime. In regard to the phosphates generally, there is one popular delusion much fostered by certain wine-dealers, and unfortunately abetted by some hasty and ill-considered statements of a chemist of European celebrity, that the presence of these salts gives to wine an exceptional value as a nervine tonic. In reality there is not the least support, in the facts either of physiological chemistry or of clinical medicine, for the theory that salts of phosphoric acid influence the nervous system except in the most indirect manner. It is true that phosphorus is a constituent of the nervous system, and it is probable that phosphates in the excretions are partly due to disintegration of nervous tissue, but there is no proof that phosphates, administered as such, will nourish the nervous tissues; and, on the other hand, there is a great deal of evidence tending to show that their action is limited to certain changes in the relative proportions of the alkaline constituents of the blood, and in the alkaline constituents of the wine. The phosphate of *lime* stands on a different footing from the other phosphates; and although the question of its functions within the body is far too elaborate to

be discussed here, there is some reason to think that even in small quantities, such as are present in lime, it may prove a valuable agent in assisting the processes of cell-growth in young tissues or in tissues that are undergoing rapid repair after disease or injury.

Upon a general review of the question of saline constituents of the various wines, there can be little doubt that in this respect, the varieties which possess the highest merits are, successively, the wines of Bordeaux, Burgundy, the Rhine, and Hungary; that is to say, among natural wines which must be the principal subject of our consideration in regard to the use of wines as a daily beverage.

6. We come now to what is by far the most difficult and obscure part of the discussion upon wines; the estimate, namely, of the value of their highly characteristic secondary elements, which are formed during the period of storage. The chemistry of the subject is only in its infancy, and so much of it as is already made out is by no means easy to explain in brief outline. But the difficulty of application of such chemical facts as are known to the practical selection of wines for dietetic purposes, is aggravated by the fact that the question becomes immediately complicated by secondary considerations. In dealing with those elements of wine which have already been discussed, the task was simple, for the very first of these topics—that of alcoholic strength—introduced considerations which showed that if wine is to be used as a beverage, both temperance and economy most strongly argue that the bulk of the community should limit themselves to the class of natural wines produced under such conditions as enable the cheaper varieties to be relied on as sound, wholesome, and palatable. We have now to deal with properties of wine which can only be legitimately developed by age and careful handling, and must, therefore, involve increased costliness; but which, when developed, have the most valuable effects, not merely in increasing delicacy of flavour, but in fitting the wine to supply, in a very important manner, certain special needs of life. We must, therefore, comparatively disregard questions of economy, and deal with wines from the point of view of a refined, yet not unwholesome luxury on the one hand, and of a cordial, for special emergencies, on the other. This greatly

widens the field which we have to survey, for without meddling with the strictly medicinal uses of wines at all, we are bound to examine the properties of a variety of wines (especially the *fortified* kinds), which as beverages of daily life for healthy adults, we deliberately disapprove of, or set aside as too expensive for consumers whose income is but moderate.

These substances of secondary formation are the *compound ethers*, to which wine of a certain age owes the greater part of its flavour and bouquet, and which have a scarcely less important influence in heightening the quality of the liquor as a stimulant of vital functions. The first of these results is well recognized by connoisseurs, though the most accomplished amateurs are often singularly ignorant of some important features of wine flavour; the second is most perversely ignored or misunderstood by the majority of medical men in their capacity of instructors of the public.

When the primary process of fermentation of wine has been brought to a standstill, whether because there is no more sugar to be destroyed, or because there is no more available[1] ferment to carry on the process, there remain in the liquid two kinds of substances—alcohol and acid, or rather several alcohols and several acids, which must react upon each other, producing, more or less rapidly and completely, a substitution of compound ethers for the alcohol generated by the primary fermentation. The compound ethers are of two kinds, fixed and volatile, and there is a great difference between the importance of the two classes; according to Dr. Dupré, the fixed ethers have probably scarcely any value beyond the indirect one of neutralizing a part of the acid and facilitating the formation of volatile ethers.[2] It is the great merit of Dr. Dupré's investigation into the constitution of wines, that he has enabled us to take the first important steps in the appreciation of the relative proportions, as well as the relative merits, of these two classes of compound ethers, and has opened the way for a large amount of promising

1 We say *available*, because the albuminoid substance may be only temporarily locked up by other natural constituents of the wine, or by alcohol artificially added.

2 This is probably true from a chemical point of view, but is too absolute a statement, I think, if it be applied to physiological action.

inquiry into the more obscure questions as to the physiological action of wines.

If we glance down the tables already referred to, bearing in mind the explanatory directions which accompany them, we note the following capital facts as regards ethers of the principal European wines. Among the natural wines we find the Hungarian predominant, on the average, in the important merit of excess of volatile over fixed ethers; but inferior to Rhine and Bordeaux wines in the total amount of ethers. Bordeaux comes next on the average, in the excess of volatile over fixed ethers, but is somewhat inferior, on the average, to Rhine wine, in total ethers. One specimen of expensive hock (72*s*. per doz., vintage 1862) exceeds any single Bordeaux or Hungarian wine quoted, both in total ethers and in the excess of the volatile over the fixed; the general composition of this wine is typical of a high-class natural white wine, thoroughly fermented, and possessing all the best qualities of a bottled wine. It is interesting to contrast Greek wine with Hungarian in respect of the ethers; *e.g.*, in a white Hungarian at 34*s*. and a Greek at 36*s*. per dozen, from Dr. Dupré's tables, we observe that the total ethers are about equal, but that whereas in the Hungarian the volatile ethers are largely in excess of the fixed, in the Greek the relative proportions are reversed. The low proportion of volatile ethers in the three samples of Greek wine quoted in these tables must be considered a not unimportant defect; and we must here mention another fault of these wines which should have been referred to in our last paper, viz. the high proportion of volatile to fixed acids. We will also notify a further indictment of Dr. Dupré's against Greek wines, viz. that they frequently contain an appreciable amount of *aldehyde*, an oxide of alcohol, which, so far as known, is rarely or never present in any wine except when it is about to turn into vinegar. On the other hand, we are bound in fairness to mention that a very distinguished chemist, Dr. Williamson, has recently referred to the presence of aldehyde in these wines as a positive merit. Personally, we must disagree with this verdict, on the double ground that the flavour of aldehyde is, we think, extremely disagreeable, and that this substance is more likely, from what we know, to be injurious than useful as a physo-

logical agent. Without pretending to give a final judgment, or one intended to be universally applicable to Greek wines, we may certainly say, that supposing the analyses given in Dr. Dupré's tables to represent at all fairly the average composition of these wines, it would appear that as a class they are rich in promise rather than in performance as yet achieved: since the concurrence of the several peculiarities which have now been named points with much force to the conclusion that, from some reason, the capacity for keeping sound in bottle is defective. On the other hand, we must say that from a recent careful tasting of a number of these wines, we have recognized unmistakeable natural vinous quality of a high order in several which are quoted at moderate prices, and we are inclined to believe that as *medicinal* agents they will be found very valuable. We also rather believe that the defects in keeping power which seem to be indicated by the peculiarities above mentioned depend solely on imperfections in the present mode of manufacture, and we venture to doubt whether Dr. Dupré's anticipation that the climate of Greece will not admit of the perfection of wine-making is just.—It would be a thousand pities if a country so rich in capacity for the production of full-bodied and rich-flavoured natural wines, with an alcoholic strength conveniently intermediate between the wines of France and Germany and the fortified liquors of Spain and Portugal, should prove unable to bring its products into the European markets in a state of perfect soundness. At any rate, there is no reason to believe that the experiment has been fairly tried as yet, and we may all hope that the same energy which has done so much to introduce Greek wines to general notice, will be successful in perfecting their preparation.

We turn now to the ethereal constituents of the fortified wines, taking port, sherry, madeira, and marsala as sufficient examples for practical purposes. We at once notice the fact that these wines, as a rule, only very slowly develop any considerable quantity of volatile ethers. From the quantity of alcohol and of acids present in the wine from the first, one would suppose that a large quantity both of fixed and volatile ethers must be formed, but, as a matter of fact, one finds in a port two years in bottle (price 32*s.*,) only 0·430 per thousand

total ethers as against 0·415 per thousand in a thin 12*s.*, claret of the same age; and, on the other hand, the claret has altogether the advantage as regards *volatile* ethers, which it contains in the proportion of 0·235 to 0·180 fixed, while the port has 0·302 fixed and only 0·128 volatile per thousand. The dosing with alcohol which port undergoes, not merely arrests the primary fermentation processes, but delays indefinitely the vitally important processes of etherification. Even so old and, in many respects, splendid a wine as the port of 1851 does not contain quite so much volatile as fixed ether, though the total amount of ethers is high. The wine of 1842, on the other hand, yields a very high total percentage of ethers, of which a rather larger part is volatile than fixed. This is a magnificent wine as regards every item of its composition, and where it had been judiciously kept is still in first-rate order. The alcoholic strength is only 18 per cent., and there are but 130 grains of sugar to the bottle; the wine also still contains a high proportion of tartrates, as is evident from the ash.—The wine of 1851 is yet more moderate in alcoholic strength (15 per cent.), contains also a high proportion of tartrates, but has the advantage, or disadvantage, according as we take it, of containing more sugar, viz., 235 grains to the bottle—quite enough to make this delicious drink a gout-provoker for predisposed persons; indeed even the '42 wine will sometimes act in that way.

One has been accustomed, of late years, to hear port-wine abused with indiscriminate vehemence, and there can be little doubt that in its young and rough state it is a barbarous drink, however much its most objectionable features may be disguised by the presence of sugar and spirit. Put aside the question of expense, however, and it is simply dishonest to deny that port-wine can be procured which represents nearly all the elements of a fine wine at their best; and for certain special purposes to be named presently it is as singularly useful, as it is undoubtedly agreeable to a refined palate.

Marsala, which is easily and cheaply procured in sound condition, is a really fine wine in many ways. A very old wine of this sort was found to contain a high total percentage of ether, of which, however, the fixed were still in excess of the volatile. Marsala is free from the defects of "plastered" wines.

The case of sherry is singular among fortified wines, and affords a good instance of the way in which a popular cry confounds things which are utterly distinct in one condemnation. At the present moment there are hundreds of persons who imagine that all sherry is, from first to last, a coarse sophisticated drink, of the same general character and strength as port, and like it to be utterly repudiated by reformers in wine. Doubtless sherry has the fault of being universally fortified; and it is also mischievously affected by the "plastering" already mentioned. But on the other hand it is remarkable that in sherries, from an early period, a high proportion of volatile ethers is developed; and an expensive bottled sherry of the 1857 vintage mentioned in Dupré's tables presents about the highest development of this quality which it is possible to find in any wine. There is no reason, then, that even a young sherry (two years in bottle), if genuine, should not present the most important characteristics of a well-made wine; while, as regards the older specimens, analysis fully confirms the opinion which, personally, we have long entertained—that of all the strong wines there is none to compare, either in generous character, or in delicacy of flavour, with a really fine old bottled sherry. We shall revert to this point when we speak of the employment of the stronger wines in the treatment of disease; at present we must introduce some remarks on the special dietetic uses to which the more potent wines are particularly adapted.

And first, as regards the infancy of delicate children. Of all the subjects on which conventional morality has talked pernicious nonsense, there is none upon which, in a small way, it has done more decided mischief. The worthy teetotallers have easily enlisted the sympathies of persons whose experience of the management of children was limited, when they have declaimed against the practice of "rearing drunkards from the cradle," &c., &c.; and it is, of course, quite possible to do even so dreadful a thing as this. But the judicious use of wine as a part of the diet even of quite young children (of course always under medical sanction) is entirely free from such dangers, and, on the other hand, may do positive good of a very visible kind. The cases in which it is useful (we are now talking of children not absolutely diseased) are, (1) those where a tendency to

wasting is very marked,—*i. e.*, where children are very apt, without positively seeming ill, to run down suddenly in flesh, with or without simultaneous failure of appetite; and (2) those where trifling catarrhal affections are very easily caught, and very slowly shaken off. We are firmly convinced that multitudes of such children have been allowed to slide into confirmed ill-health, and then into organic disease, who would have done perfectly well had such symptoms as the above been attended to by the administration of wine. Now the right way to deal with children about wine is precisely the reverse of the plan which is appropriate for adults. The latter should be advised to take wine only with their meals, and the problem, therefore, is to find for them a light natural wine which may safely be used as a beverage. With children, on the contrary, it is much better to give wine at separate hours, as if it were strictly a medicine; and the potent wines, disguised and made somewhat disagreeable by the addition of bitters, are much the best: for example, a teaspoonful of sherry or port made up to a tablespoonful with strong infusion of gentian, which might be given three times a day to a child of three or four years old; or even double this quantity may sometimes be advantageously given. But the point which we wish to dwell on more particularly here is the superiority of sherries to all except the most *recherché* kinds of port for this kind of purpose. The improvement of appetite and nutrition, which is sometimes marvellous in young children who have been put on an allowance of wine, is never observed in so striking a degree as after the administration of wine containing a high proportion of volatile ethers. Even a common 30*s.*, sherry, such as any respectable wine merchant will supply, is more highly gifted in this particular respect than any port which is within the reach of ordinary purchasers. It is therefore a point of much consequence that in prescribing wine as supplementary food for children whose parents are not wealthy we should recommend sherry rather than port. Sherry is also markedly superior to marsala for this purpose.

Used under the precautions above given, not merely is there no danger of wine corrupting children's tastes, but the services it renders to health are more important than those of any medicine with which we are acquainted; indeed, it is just in the cases where

medicines would disorder the stomach and aggravate the child's *malaise* that wine plays the most remarkable dietetic *rôle*.

As a dietetic aid in the debility of old age the more potent wines are even more remarkably useful than in infancy and childhood. More particularly in the condition of sleeplessness, attended often with slow and inefficient digestion, and a tendency to stomach cramps, a generous and potent wine is often of great value. It is not desirable for such persons to include a large allowance of fluid in their daily diet, and their alcohol may well be taken in the more concentrated forms. Moreover the fine volatile ethers which develop in well-kept old bottled port and sherry have an extraordinary influence in heightening the stimulant and tonic influence of alcohol. But in this category sherry is to be reckoned as a much more convenient agent than port, because we are able to get the specific effects of the volatile ethers at a much more reasonable price in the case of the former than of the latter wine.

One very important effect of the highly etherized wines, which are at the same time of rather high alcoholic strength, is their power to produce tranquil and prolonged sleep in aged persons. Supposing that we allow an aged person eight ounces (four glasses) of sound sherry for total daily alcoholic allowance, then we shall afford him the maximum of comfort by ordering that half this quantity shall be taken, with some light food, at his supper hour. Considering how simple a prescription this is, it is surprising how often its value is ignored by medical men, though the popular custom of a "night-cap" of toddy for old people, even when they have been little accustomed to alcohol in their younger days, shows the existence of a need for some agent of this kind. Plain alcohol is, however, a much less efficient hypnotic, unless taken in objectionable quantities, than the highly etherized wines; and no spirit, except the finest and most expensive old cognac or rum, approaches good sherry in this kind of value. In all probability it is precisely ethereal constituents of such old bottled spirits which give them their hypnotic and calmative power over the nervous systems of the aged.

We here conclude what we had to say about the dietetic use of wines by healthy persons. It was never our intention to

dwell in detail upon the merits and demerits of individual wines, except as they fall into main groups which illustrate leading dietetic rules. It was our object to lay down certain great principles which ought to govern the selection of wines for daily use, and especially to show how wine might be made the wholesome beverage of ordinary life rather than a dangerously seductive luxury, leading easily to mischievous excess. We have purposely abstained from dwelling upon such wines as fall merely within the category of luxuries for occasional indulgence; but some of them, which are either too expensive, or in other ways objectionable for daily consumption, will find an important place in the remarks which we shall have to make in Part II. of these papers, on the use of wines in disease. For the present we may be content with the following summary of the points we desire to insist upon.

1. Wines for daily use by healthy adults should not, on the average, contain more than 10 per cent. absolute alcohol; 8 or 9 per cent. is better.

2. If wine be used as the daily drink, it is best, as far as may be, to use only one kind at a time, and no other form of alcoholic liquid.

3. Sound natural wines are to be obtained at the best economic advantage from the Bordeaux district; the red wines are to be preferred.

4. Rhine wines (white) are equally excellent, but more expensive.[1]

5. Hungarian wines are also, in many instances, excellent, but are at present too dear for daily use except by the rich. They are also unequal in quality, owing to defects of manufacture.

6. Greek wines labour under the same defects; the latter, especially, in an aggravated degree.

7. The fortified wines, as a class, develop no proper vinous qualities till they have been some years in bottle. Sherry, however, is greatly superior to the other wines of this class, in the rapidity with which it develops the volatile ethers.

1 In a former article we stated that a German ordinary wine, equal to the ordinary Bordeaux which can be procured in London at 12*s*. a dozen, would cost twice as much. We have since been assured that this is exaggerated; and that a good ordinary Rhine wine can now be had for 18*s*. per dozen.

8. Fortified wines in small quantities, especially sherry, for the reason just named, are the appropriate stimuli of certain kinds of infantile and youthful debility, and of the enfeebled nervous system of old persons.

Finally, we may add a few words in correction of a statement which occurs in a former paper, and which, by ambiguity of phraseology, has led to misunderstanding and consequent cavil. We did not intend, when recommending the "hard-working *student*" to allow himself a bottle per diem of weak Bordeaux wine, to give that recommendation to young lads. We were thinking of "hard-working students" of middle age; and we would state our very firm conviction, that for youths (say under 25) whose bodily frame is as yet not fully consolidated, the proper rule is, *either no alcohol or very little indeed.*

From the time of puberty onwards, there arises a much greater susceptibility to the injurious influences of alcohol upon the emotions and the character; and between the date of puberty and the age of 25, or even 30, it would be better, in ordinary cases, either to abstain altogether, or to limit the allowance to one-third or one-half the amount above named. Still, there can be no question that to many rapidly-growing lads an amount of alcohol (preferably as beer) strictly limited to these latter quantities is not only harmless but most actively useful.

Reviews.

Public health: a Popular Introduction to Sanitary Science; being a History of the Prevalent and Fatal Diseases of the English Population from the Earliest Times to the End of the Eighteenth Century. By William A. Guy, M.B. Cantab., F.R.S., &c., &c., Professor of Forensic Medicine and Hygiene in King's College. London: Renshaw, 1870.

We welcome very heartily this small treatise from the hand of one who is a veteran in sanitary science. Dr. Guy belongs to the select class of citizens who deserve well of the republic, but whose modest labours the republic scarcely hears anything about; and there are probably few persons who remember that twenty-five years ago he had already engaged in some of the most useful sanitary inquiries that have ever been made, and, indeed, contributed not a little to the formation of the modern school of hygiene research.

On the present occasion Dr. Guy has undertaken a task which some persons may think easier and less irksome, but which we believe to be far more difficult and troublesome to a conscientious person, than the conduct of the driest and most severely scientific research would be. Those who think it a small thing to write popular treatises on hygiene are so far right, that it is indeed very easy for a mere dabbler in science to do so. But to a man of real information and scientific spirit, the task is by no means light, for he feels accutely the danger of misleading the public on matters of such high importance. He knows that it is much easier to draw striking pictures which will produce a powerful effect on the reader, than to impress on the minds of unscientific persons the necessity for caution and suspense of judgment where our information is still incomplete.

In presence of these diffiulties Dr. Guy has, perhaps, taken the course which was safest and best. Called to deliver the first course of the lectures from the newly-established Chair of Hygiene at King's College, he has been content to spend one season in laying down what may be called the historical foundations of the science. He has given us a continuous history of the epedemic diseases which desolated England, and the remedies at first feeble and ill-devised, and only gradually assuming distinct

shape and guiding principles, from the earliest times down to those later years of the eighteenth century which were distinguished by the splendid sanitary labours of John Howard the philanthrophist, of Sir Gilbert Blane, Sir George Baker, and many other eminent men, the series being closed by the illustrious Jenner, who commenced his vaccination experiments in 1795. We are sometimes apt to think and speak of hygiene as if everything which has been gained in this department were a thing of but a very few years' growth, and no doubt it is only of late years that a body of scientific teaching on these subjects has existed; but it is extremely interesting to observe, in perusing Dr. Guy's pages, that the very same qualities which are now universally recognized as necessary to the philosophic sanitarian were exactly those which distinguished those great men to whom we owe the unspeakable benefits of a power to grapple with such fearful national curses as the scurvy, the jail-fever and the small-pox at one time were.

Dr. Guy has a natural aptitude for effective numerical statements, and a power of summing up the successive results of sanitary science in successive periods of history which makes his narrative at once interesting and convincing. He has well fulfilled the task of describing the miseries of the times when hygiene did not exist at all; and he has given an interesting picture of the dawn of the science. We trust that on the occasion of his next official course he will carry us down to the researches of the present day, and give us the benefit of his forecast as to the main direction which the future achievements of sanitary science must take.

Lectures on some Subjects connected with Practical Pathology and Surgery. By HENRY LEE, F.R.C.S., Surgeon to St. George's Hospital, &c., &c. In 2 vols. Third Edition. London: Churchill, 1870.

THESE volumes contain the substance of the second editions of two separate volumes of lectures previously published, together with several new ones, and they now form a valuable body of teaching on a large proportion of the subjects included in practical surgical pathology. It is quite unnecessary for us to describe Mr. Lee's characteristic abilities, either as a scientific investigator or as a writer; and upon most of the topics which are treated of in these volumes his opinions are well known. There are, however, sundry novelties in the shape of arguments on recent theories which touch some of Mr. Lee's favourite subjects: and of course of the subject of syphilis is treated with greater fulness of detail than ever. It is in regard to syphilis, indeed, that the author's characteristics come out most plainly: on the one hand, his immense energy, industry, and quick per-

ception; and on the other hand something which must be termed, we do not mean it at all invidiously, a spirit of partisanship. It is a curious and really rather melancholy fact, that a plain man, looking for safe guidance upon any of the more doubtful questions in the pathology of syphilis, has very soon to learn that scarcely one of the syphilographers, however conscientious, is really quite a safe guide to an estimate of the real positive knowledge which science so far posssesses. Mr. Lee is transparently straightforward in intention; yet it seems to us impossible to doubt that his anxiety to demonstrate the inoculability of constitutional syphilis has led him to force into the service of his argument facts wich will scarcely bear the strain which he puts upon them. To take one example, on a subject with which we are personally more familiar than with most of the subjects dealt with in these volumes, we must remark that Mr. Lee's dealings with the question of so-called vaccino-syphilis appears to us to display this tendency unconsciously to make the most of evidence for vaccino-syphilitic inoculation because that very evidence would strongly support the general theory of the communicability of syphilis by the blood. With regard to the Rivalta cases we have already expressed our opinion in another place, and we confess that after refreshing our memory with Mr. Lee's own statement of this affair we are more than ever persuaded that the panic which grew out of that incident would never have obtained more than a momentary importance had not these unfortunate occurrences been seized upon as a new battle-field for the conflicting schools of syphilography.

However, we have no wish to speak in any terms but those of high praise of the general character of Mr. Lee's work, which is highly practicable and valuable. We are glad to observe that he has very sensibly so arranged the matter of the two volumes, as to allow of their being sold separately to persons who do not want to buy both. This will be a great convenience for many persons who would hesitate to purchase two large octavo volumes, but might be very anxious, for instance, to possess the volume on Venereal Diseases.

On Hernial and other Tumors of the Groin and its Neighbourhood, with Practical Remarks on the radical Cure of Ruptures. By Carsten Holthouse, F.R.C.S., Surgeon to the Westminster Hospital, and Lecturer on Surgery to the Hospital School, &c., &c. London: Churchill, 1870.

This unpretending volume belongs to a useful class of works, which we may expect and hope to see multiplied. It is a monograph of an essentially practical nature, the subject being discussed from a clinical point of view in the form of a narrative

of actual cases, and as such it appears well fitted to give advanced students and country practitioners, to whom the question of hernia and the tumors which resemble it is of vital importance, a sound acquaintance with everything that they need to know of the matter. We have been much struck with the extensive and well-assorted series of cases, most of them from the author's own practice, with which the volume is filled; and so far as we can judge, the method adopted by the author appears calculated materially to simplify the study of a subject which to us in our student days appeared very difficult, and beset with obscurities that were not a little due to a profuse and unnecessary display of technicalities in the classical treaties upon it. We should have heartily welcomed the present volume in those days, and we have now much pleasure in recommending it to those who are about to commence surgical or general practice.

Lectures on Surgical Pathology, delivered at the Royal College of Surgeons of England. By JAMES PAGET, F.R.S., D.C.L. Oxon., &c., &c. Third Edition. Revised and edited by WILLIAM TURNER, M.B. Lond., Professor of Anatomy in the University of Edinburgh. London: Longmans, 1870.

IT would be very superfluous for us to say many words in calling the attention of the profession to this new edition of Mr. Paget's great work on surgical pathology. Its author has been singularly fortunate in securing the assistance (for this and the previous edition) of so able a *collaborateur* as Mr. Turner, and English surgery may point with pride to the present volume as one unsurpassed, if it is at all equalled in the surgical literature of the world, for breadth of views and philosophic grasp of its subject. It does not fall within the proper scope of this journal to review a purely pathological work, and we shall therefore merely allude to one feature of the new edition which is of universal interest, namely, the chapters on inflammation. The reader will find them an extremely interesting discussion of the more recent views, including the doctrine of migration. Messrs. Paget and Turner, while admitting the general fact of the "migration" of corpuscles, are disposed to assign this phenomenon a much more limited *rôle* in the production of inflammation than is claimed for it by Cohnheim. This opinion is in accordance with the recent and very elaborate researches of Stricker, and also, we believe, with those of Augustus Waller, to whom belongs the real credit of first observing the migration, several years before Cohnheim made any researches on the subject.

Clinic of the Month.

Therapeutical Use of Arsenic Phthisis.——The very favorable results which Dr. Moutard-Martin had delivered from arsenic in the treatment of tuberculosis have led M. Nonat to try the substance in a large number of cases. He has administered the remedy under the form of arsenious acid, and in doses of about one-seventieth of a grain to begin with in pills. This dose was gradually increased every eight days by one seventieth of a grain, till the dose of one-twenty-eighth of a grain was reached per diem. In these proportions the medicament has afforded him good results in cases where tuberculosis had attained only the first or second stage, and presented no intestinal complication; for when vomiting and diarrhœ have set in, arsenic must be at once discarded. When phthisis is incipient, and when it is well circumscribed, M. Nonat has seen arsenic increase the appetite and strength of the patients; they gain flesh, look much better and feel stronger and more cheerful. In such cases the medicament does not increase the pulmonary congestion, and indeed is attended by no inconvenience. The only counter-indication lies in the alimentary canal. In many subjects, however, placed in the above conditions, arsenic, if it did no harm, failed to produce any benefit. (See *Lancet*, March 26, 1870.)

Induction of Premature Labour.—Dr. Skinner furnishes the details of two cases, in which, instead of adopting the old method of puncturing the membranes, premature labour was several times successfully induced by the application of the water-douche, as recommended by Dr. Tyler Smith. The following is one of these cases:—Mrs. R———, wife of a labouring man, had been four times delivered at full term, her life on each occasion being place in considerable danger, and the child still-born from protracted labour. Before she came under Dr. Skinner's care, it had been determined at the fifth pregnancy that she must be delivered at the seventh month, the difficulty in her case being generally contracted pelvis. Accordingly, when the time arrived, a quantity of warm water was thrown up in the evening, the long tube of an ordinary stomach pump having previously been passed about an inch and a half within the os uteri. Finding in a few minutes that the water did not

cause any constitutional excitement, he passed the tube gradually a little higher, with a view of partially detaching the membranes from the uterus by the water. He continued to throw up the water for nearly ten minutes. In the morning he found the os slightly dilating, the head presenting high up. Pains came on then pretty rapidly, and when the os became fully dilated, as the head did not descend, he ruptured the membranes; a living male child being born very shortly, about eighteen hours after the application of the douche. (See *Lancet*, March 26, 1870.)

Popliteal Aneurism Treated by Pressure.—A case is recorded by Mr. Chiappini as being under the care of Dr. Keith, in which an aneurismal tumour, that in the course of four months had attained the size of a hen's egg, was subjected to this mode of treatment at the Aberdeen Infirmary. The pressure was applied by means of a Carte's tourniquet over the femoral artery in Scarpa's triangle, the compression being shifted up and down the thigh when it became painful. After this treatment had been continued for twenty-one hours the track of the vessel became exceedingly tender, and digital pressure, conducted by relays of students, was substituted for the tourniquet. After thirty-seven hours' compression all pulsation in the aneurism had completely stopped; slight pressure was, however, maintained for forty hours longer, by which time the internal articular branches of the popliteal artery had increased to the size of the radial. No change of temperature occurred at any time in the affected limb. Three or four days afterwards the tumour was perfectly solid, and the patient was in every way doing well. (See *British Medical Journal*, April 2, 1870.)

Therapeutic Uses of Chloral.—A considerable number of communications have appeared in the different journals on the value of this remedy, of which we shall here briefly give excerpts. Dr. Monckton, of Maidstone, gives the details of one case in which, hernia having been some months previously present and reduced, symptoms of strangulation of the intestine occurred; there was a hard globular painful tumour between the internal abdominal ring and the umbilicus on the left side, with vomiting, pain, and distention of the belly. Chlorodyne failed to give relief, but 45 grains of hydrate of chloral at one dose procured sleep, and a relapse having supervened, accompanied by stercoraceous vomiting, 50 grains of chloral every night soon effected a satisfactory resolution of the intestinal difficulty, and within a fortnight the old man had fairly recovered. A second case by the same observer showed the efficacy of the drug where dyspnœa, tumultuous action of the heart without bruit, feeble and very irregular pulse, with some cough and expectoration, were the principal symptoms. Its beneficial effects were well

marked also in a case of phthisis with night cough and nervous insomnia, in which it was administered in 30-minim doses. Mr. Denton, of Maidstone, relates a case of traumatic tetanus, resulting from a fall from a cart, in which marked symptoms existed. Here the bowels were first relieved by a brisk purge. Morphia, nepenthe, and chloroform were given without effect for five days, and chloral was then substituted, and repeated doses were given till sleep was procured, which at first lasted but a few hours. Ice was applied to the spine for the first few days, and subsequently a liniment of belladonna and chloroform, with a poultice to the injured part. At a later period, scruple doses of bromide of potassium were prescribed, and then bromide of iron, with 5-grain doses of hydrate of chloral, and the lad made a good recovery. Mr. G. S. Brady, of Maidstone, records cases showing the advantages to be anticipated from its use in irritable bladder and urethra, complicated with retroverted uterus; whilst in another case it proved of great service in warding off sudden dyspnœa with violent pain in an old man of seventy; and lastly, it was successful in relieving pain and constant vomiting occurring in a patient who had suffered for many years from chronic ovarian disease, with recurrent attacks of inflammation. All the above-mentioned writers agree that it allays nervous excitement and produces sleep without the occurrence of any subsequent ill effects, as vomiting, nausea, headache, or depression. (See *British Medical Journal*, April 2, 1870.)

Treatment of Perforations of the Membrana Tympani. Dr. Dalby contributes an interesting paper on this subject, in which he adopts and recommends the treatment suggested by Mr. Hinton, of Guy's Hospital. He observes that the mere existence of the perforation is not the cause of the deafness, but that this is to be found in the disease of the middle ear which occasioned the perforation, and which still remains. The principle of treatment, as laid down by Mr. Hinton, is to remove entirely the morbid secretions accumulated within the tympanum, and to keep the cavity cleansed; for when the tympanum becomes congested, the swelling of its mucuous lining soon closes the Eustachian tube, and its secretion having no other exit than through the membrane, perforations are continually kept open, or after closing, are re-opened by the pressure of discharge within. In Dr. Dalby's cases, when the ears had been well cleansed by an ordinary syringe, a syringe was used with a nozzle which fitted the meatus, and was defended by a piece of india-rubber tubing. In this way alkaline solutions were sent through the tympanum and Eustachian tube, passing out through the nose. This was done once or twice a week. After a time astringent solutions were substituted for the alkaline, five grains of sulphate of zinc to

the ounce of water being the one generally employed. By the adoption of this plan considerable accumulations of secretion are often removed from the tympana and Eustachian tubes, and masses of secretion are expelled which have evidently been in the Eustachian tube for some time, and have formed almost casts of the part where they have been lying. The tympana were regularly inflated on Pollitzer's plan, and astringent lotions containing a little opium were poured into the meatus at night. (See *Lancet*, April 23, 1870.)

Improved Method of Extraction of Cataract.—Dr. Taylor, of Nottingham, describes a new method of performing this operation, for which he has invented a special form of knife. The instruments he employs are a pair of sharp forceps that pierce the sclerotic, a very light speculum, and two knives a line in width and bent at an angle (similar to the ordinary iridectomy knife), one with a sharp point, the other with a blunt or bulbous extremity. As the danger in his mode of operating, even if vomiting occurs, is slight, he employs chloroform. The lids should then be separated with the speculum, and the globe seized with forceps at about the junction of the upper with the middle third of the cornea. The pointed knife is then entered in the corneo-sclerotic junction one or two lines from the forceps, at the summit of the cornea, pushed well into the anterior chamber, and carried along the summit a distance of six or seven lines. If it be desirable to associate an iridectomy with the extraction, a portion of iris may now be excised. If the cataract be over-mature, or if there be a tough capsule, the lens may be extracted without opening the latter. If not, it should be carefully lacerated in the central and lower segments, and the operation completed in the usual way. When there is little or no danger of inflammatory complication, or other contra-indication, and the patient has prominent globes, the iridectomy need not be performed, and the cataract can then be removed by extending the incision down the side of the cornea with the blunt-pointed knife, so as to form a lateral flap. This is very favourably situated for subsequent manipulation, and in this way the greatest success may be obtained, the patient retaining a central and moveable pupil. (*Ibid.*)

Hydrate of Chloral in Cancer.—Mr. Weeden Cooke states that he has recently tested the hypnotic value of chloral in this disease as compared with opium and other remedies, administered either by the mouth, by the rectum, or hypodermically, and finds the results obtained in the cases in which he has employed it so charming and so persistent that, fortified by the published experience of others, he feels bound to add his in confirmation of the excellent results obtained from its judicious use. He

reports eight cases, three of which were epithelioma, and two of uterine cancer, in which great relief was experienced. He adopted the mode of administration recommended by Mr. Squire, namely, the addition of syrup of tolu and peppermint water. Another writer in the same journal, Dr. Rattray, recommends, as the best mode of exhibiting the hydrate of chloral, to mingle it with an equal quantity of glycerine (ʒ ss), and add sufficient water. (See *Lancet*, April 30, 1870.)

Atropine Poisoning from Hypodermic Injection.—The following case affords a caution against using hypodermic injections of powerful drugs rashly, and without experience of their strength. M. Stocks states that, having had an attack of lumbago for ten days or a fortnight, he determined to try the effect of hypodermic injection, and got a medical friend to give him six minims of a solution of atropine, which he had frequently used in his own practice, containing one grain of the alkaloid to two drachms of water. From this he obtained very satisfactory relief for a day or two. The pain recurring, he again had recourse to his friend, who injected a dose of his own solution, containing a precisely equal quantity of atropine, which he had obtained from a different druggist. This was injected at 9.30 P.M. In less than five minutes M. Stocks became aware that he had an overdose; his heart began to labour heavily, and to his feelings roughly, at the rate of about fifty per minute, accompanied by a sore feeling immediately over the base of the heart. This continued about ten minutes, and was immediately followed by intense thirst, dryness of the mouth and throat, with great perversion of sensation, everything tasting intensely acid. The skin of the whole body began to feel tinged and swollen, and in about an hour and a half was covered with a rash precisely similar to that of scarlet fever. There was also diplopia; during the evening he was completely unable to read the newspaper. Next morning there was power to read with one eye at once, and in the evening the disturbance of vision had entirely gone, as well as all other signs of the action of the drug. [It would have been interesting to have ascertained the condition of the arterial circulation in the eyes, when M. Stocks was under the full influence of the drug. The occurrence of the rash is of much interest. Was it not due to local paralysis of the sympathetic?] (See *British Med. Journal*, May 14, 1870.)

Extracts from British and Foreign Journals.

Treatment of Scarlet Fever.—A curious prescription is given by Mr. Kerr, of Canada West, for scarlet fever, which he states has been the result of numerous trials. It is composed of the powdered leaves of *Stramonium*, *Dulcamara*, *Sium lineare*, *Cicuta maculata*, and *Conio-selinum Canadense*, together with digitalis, squills, or anhydrous bisulphite of soda—digitalis or squills being in the proportion of a half part, bisulphite of soda in the proportion of two parts, the others in that of one each. To suit differences of age, of constitution, and of the prevailing epidemic, three combinations are formed out of these: one containing digitalis and the five ingredients which precede it; this is the first, and is generally best adapted for adults; a second, with squills substituted for digitalis, is generally best adapted for infants and children; and a third, with bisulphite of soda taking the place of digitalis or squills, is adapted to all ages. When to the above five remedies opium is added, it constitutes an effective medicine against dysentery. Mr. Kerr states that the medicine here recommended is founded upon the principle that power is gained by combination, each ingredient apparently possessing some property not contained in the others, the combined effect of these properties being necessary to combat the disease. Numerous trials were made, at first with henbane and camphor, and afterwards with various combinations of the different narcotics of the Materia Medica. This investigation comprises an examination of thirty-two plants, or their products, and extended over five or six years. (*Edinburgh Med. and Surg. Journal*, Jan. 1870.)

Iodide of Silver in Hooping-Cough.—Dr. Bartlett writes to the effect that he has used this remedy in hooping-cough for twenty-five years, without ever having observed it to fail in decidedly controlling the frequency and violence of the paroxysms within a week, and often within a few days, after commencing its use. It appears to have been originally recommended by Dr. Patterson in 1843. It is prepared by decomposing nitrate of silver by iodide of potassium, washing the yellow precipitate which falls, and drying. It is best administered to children by mixing it with white sugar, so that one grain will contain one-eighth of a grain of the remedy, or as in the following prescrip-

tion:—Iodide of silver, 10 grains; white sugar, 70 grains; gum tragacanth, 10 grains; moisten with a drop or two of water and make into eighty pills, each of which will contain one-eighth of a grain of the salt. To a child of two or three years old one pill may be given, immediately before or after meals, from three to five times a day. Dr. Bartlett does not claim for the remedy that it will cut the disease short in one day, or even in two or three, but he observes, if any one will try its effects on two children simultaneously affected in the same family, a week will satisfy him of its efficacy. The iodide requires no watching, is readily taken by the youngest children, and does not interfere with the digestive functions. It is alike safe, pleasant, and effective. (*American Practitioner*, vol. i. No. 2, 1870.)

Treatment of Diarrhœa in Children.—M. Heller recommends the nitrate of bismuth in doses of half-a-drachm to one drachm in the diarrhœa of infants. At the outset this may be repeated every hour, till the looseness of the bowels ceases, which usually happens within twenty-four hours. No ill consequences ever result from its employment. (*Deutsches Archiv f. klin. Med.*, Band vi. p. 107.)

The Treatment of the Nervous Form of Dysmenorrhœa.—According to M. Siredey, the treatment of dysmenorrhœa varies essentially with the cause; it should also be modified to meet the conditions present in the period of the crisis, and those occurring in the intervals. In the nervous form, at the menstrual period, there is severe pain, and the object is to calm nervous irritation. Here, therefore, narcotics, antispasmodics, and even anæsthetics, are indicated. In the intervals of the catamenial period in the nervous form of the disease, especially if associated with chlorosis, full diet, tonics, and country air and exercise should be prescribed; but if with a nervous diathesis, antispasmodics, valerian, asafœtida, ammoniacum, oxide of zinc, are appropriate. If the patient be very excitable, cold baths and a judicious application of the hydropathic plan of treatment generally should be adopted; and when the catamenial period supervenes, local application of opium, belladonna with or without chloroform, and injections of valerian or asafœtida are useful. During the period absolute rest should be enjoined, with narcotic fomentations, and injections may be given containing twenty to twenty-five drops of laudanum. He is undecided in reference to the employment of anæsthetics, only using them in extreme cases, and preferring to them the hypodermic injection of morphia or atropia. Camphor, musk, castor, and ammonia, are beneficial in various cases, and he has seen benefit result from the introduction of a hysterometer, which acts by allowing the free escape of the

blood, and removing the spasmodic contraction of the orifices. In hysterical cases frequently repeated purges of a saline character are indicated, especially by means of the waters of Seidlitz, Püllna, and Birmenstorf; the iodide and bromide of potassium, conium, and the so-called resolvent waters of Vichy, Ems, and Carlsbad, are also serviceable with local depletion. Should, however, as is sometimes the case, atony of the generative organs be present, emmenagogues and cold baths should be taken, vesication of the neck, the direct application of iodine. He appears to consider the treatment of electricity to be not without danger. (*Dictionnaire de Médicine et de Chirurgie*, t. xii. 1870.)

Therapeutic Value of Veratrum Viride.—A paper appears by Dr. Hadlock in the *Medical and Surgical Reporter*, in which the action of this drug is fully discussed. According to his observation, its primary action is on the heart, as appears from its controlling influence on the pulse. In large doses it produces nausea and vomiting, and other symptoms make their appearance, the system becoming completely relaxed, with free perspiration and a pale cool surface. Occasionally the symptoms are more alarming; extreme pallor occurring, with occasional syncope, which is generally brought on from rising suddenly from the recumbent position. The symptoms of globus hystericus are sometimes present, but very rarely, in nervous females. No evidence was obtained of its primary action on the nervous centres, as evinced by drowsiness, stupor, coma, or delirium, nor any effects on the kidneys or bowels. Opium and its salts act very happily as an antidote, relieving any of the above symptoms when they become alarming. Veratrum appears, he thinks, to be indicated in all cases where there is determination of blood, or congestions either local or general. With this remedy the heart's action can be kept under perfect control, allowing it almost any number of beats consistent with life; and this may be continued for days without that prostration supervening which so many appear to apprehend. In all febrile affections it is used to very great advantage, especially in those whose osteology is obscure, and those occurring in children from derangements of the liver, stomach, bowels, &c. He usually gives a cathartic, and then begins with small doses of the veratrum, and, as soon as the pulse is reduced and the surface cooled, regulates the dose till the system reacts and resumes its healthy tone. He has found it of great service in continued or typhoid fevers, in equalizing the circulation, and thereby preventing local congestions as well as in allaying febrile excitement. He tried it with success in a case of puerperal convulsions, and with equal benefit in a case of disease of

the heart with rapid action and intermittent beats. The preparation employed was the tincture, and the dose four or five drops. (*Medical and Surgical Reporter*, No. 8, 1870.)

The Treatment of Delirium Tremens by Hydrate of Chloral.—Dr. George Balfour, of Edinburgh, comments upon the change which, within the last five-and-twenty years, has come over our mode of treating delirium tremens. Formerly, under the influence of the dogma that the patient must sleep or die, the formula in vogue at the Edinburgh Infirmary was:—Tinct. opii, ʒj; tinct. hyoscyami, ʒij; spt. communis, ℥j; taken at intervals till sleep was induced: and there can be no doubt that this treatment was most positively injurious in all but the most wary hands, and only kept its ground by being less hurtful than the indiscriminate practice of blood-letting which immediately preceded it. Subsequently, the expectant treatment recommended by Dr. Ware was largely employed, which, though less positively injurious, presented special risks of its own. With the introduction of the bromide of potassium began a new era in the treatment of this disease, its use for from twelve to twenty-four hours being sufficient to induce refreshing sleep and a speedy convalescence. The dose required in some instances, however, was large (half a drachm), and required to be frequently administered, even as often as very hour, till ten or more doses were given, before it took effect. This was always troublesome; and having had experience of the good effects of the hydrate of chloral in other affections, Dr. Balfour determined to give it a fair trial. The first case of delirium tremens treated by it was one of maniacal ferocity, and had been under treatment for three days. Two doses of hydrate of chloral of thirty grains each, with an interval of an hour between them, sufficed to induce refreshing sleep and to restore the patient to health. Dr. Balfour records five other cases of varying degrees of severity, in all of which most satisfactory results were obtained. (*Edin. Med. and Surg. Journal*, May 1870.)

Cold Water Treatment of Typhus Fever.—Dr. Ziemssen and Professor Immermann give the results of their experience derived from the hospital at Erlangen. They lay great stress on the necessity of carefully studying the daily curve of temperature in typhus, and base their observations on the results of hourly registration. From inquiries extending over 120 days, they find the maximum of daily fluctuation to occur from 4 P. M. to 7 P. M., and generally between 5 and 6 P. M. It occurred at the latter period in one-third of all the observations. The minimum occurred at about 6 to 8 A. M. When a double daily curve was present, the second maximum occurred between 12 and 2 P. M. The whole number of cases under observation

amounted to 199, of whom 62 were treated with cold water. They consider a depression of 2° C. in the rectum, lasting for an hour, to represent a positive antipyretic effect; but when less marked, or lasting for a shorter term, as a negative effect. After the administration of 691 baths, a positive effect was observed in no less than 97·5 per cent. of all the cases. The effects produced by the baths augmented as the disease progressed, and the depression of temperature was particularly well marked on the fourteenth and twenty-first days. The protraction of the action of the bath was of good augury. Its action was least marked at the commencement of the daily exacerbation, and is prolonged as the period of daily maximum of temperature is approximated, when it is most marked, or between 6 and 7 P. M. They consider their experiments establish the facts that the hydropathic plan shortens the duration of typhus; and that when methodically applied it diminishes the mortality, though, if done irregularly and imperfectly, it exerts no influence at all upon the course or duration of the disease. (*Med. Chir. Rundschau*, 1870, Heft i.)

Sedative Action of Calomel in Disease.—Dr. Frederick Lente recalls attention to an old and now generally neglected mode of administering calomel, in which, instead of small doses, a *scruple* of the drug or more is given at once. Of late years he remarks a dread of these potent doses spread itself over the minds of the profession, and the smaller doses were again substituted. Thus ptyalism was induced before any other manifest effect on the system was observed, and finally this manifestation of its absorption into and contamination of the blood came to be generally recognized as necessary; in fact, as *the means* of ridding the system of the prevailing disease, a most unfortunate and fatal deduction. The diseases in which Dr. Lente has chiefly employed calomel in these heroic doses are, first, *epidemic dysentery*, in which, as soon as called in, and whilst the patient was suffering pain in belly, tenderness on pressure, distressing tenesmus and bloody stools, a scruple of calomel was given, which produced cessation of pain within an hour. In a few cases constipation requiring castor-oil occurred. He now thinks that for adults half-drachm doses are safer and less likely to salivate. Secondly, in *membranous croup*, in which disease he regards it as a specific when given in full doses and aided by such appliances as will keep at bay the urgent danger, while the calomel is acting. Thirdly, in *cholera*, both of the milder and Asiatic form. In all these cases he thinks its action is that of a sedative, its initial if not its principal influence being due to a tranquillizing action on the ganglionic system of nerves, as evidenced by the promptitude and character of its effect. This essay is one of

considerable value and interest. (*New York Medical Journal*, March 1870.)

Sir James Simpson on Chloral.—In the course of a debate on the uses of this remedy, Sir James remarked that there are two kinds of the drug in the market, a cheap sort and a dearer sort, and only the best should be trusted to. In an experiment made on himself, when suffering from a feverish attack, he fell asleep before he had read the second page of a book, and did not wake for many hours, and then without bad effects. He had found it produced nausea in some people, and one of his patients had averted this effect by taking it with lemon-juice. In a case in which it was employed by subcutaneous injection, it produced sloughing. He thought it might be administered by suppositories or pessaries. He had not found it to be constipating. In the previous meeting, Dr. Milne had read a case where a loud noise occurring at the time of labour induced convulsions, which recurred after the birth of the child, and when a drachm of the hydrate threw the patient into a heavy sleep, from which she awoke convalescent. (*Edinburg Medical and Surgical Journal*, May 1870.)

We observe in the last number of the *Imparziale* a vigorous attack upon the practice of circumcision, from the pen of Dr. Sonsino, who is of opinion that the advantages obtained in a hygienic point of view from the indiscriminate performance of circumcision are not sufficient to compensate for the ill effects that may ensue; that the principles of medical ethics do not allow of its performance as a prophylactic against venereal affection; and that as a religious rite it is deserving of condemnation. (*L'Imparziale*, No. 8, 1870.)

Soluble Saccharate of Iron as an Antidote to Arsenic.—The value of this preparation, which was long ago recommended by Bunsen and Berthold in poisoning by arsenic, has recently been demonstrated in a case recorded by Dr. H. Köhler. Its efficacy depends on its precipitating the arsenic in the form of insoluble arseniate of iron. The patient was 18 years of age, healthy and strong. He mixed a large quantity of arsenic with a little water, and after exposing the liquid to the sun for an hour, drank a considerable portion. About 15 grammes of the arsenic remained at the bottom of the vessel, but it was calculated he must have swallowed from 30 to 45 grains of the poison. An hour afterwards there were retching and vomiting, with violent pain in the belly, and great thirst; skin cool, pulse 104, respiration 16. Some sour milk had been previously taken. The saccharate of iron was now given, in doses of a teaspoonful. Lemonade was permitted to assuage the thirst, and the abdomen

was rubbed with a liniment, containing hyoscyamus and chloroform. The saccharate was repeated at intervals of an hour. Towards the evening improvement took place; copious yellow evacuations occurred. The urine discharged was acid, moderate in quantity, and contained no arsenic. The patient slept well the same night, and was convalescent on the following day. (*Berlin klin. Wochenschrift*, Nos. 35 and 36, 1869.)

Treatment of Gangrene of the Penis.—A good paper on this subject appears in the *Archives de Médicine*, from the pen of Dr. Demarquay, who observes that at first sight the therapeutics of this disease appear only to merit secondary consideration, since the line of treatment to be adopted by the surgeon is so obvious. Nevertheless, authorities are by no means in accord with one another in regard to it. Essentially, however, it consists in preventing its invasion when imminent; in arresting its progress when it has commenced; and finally, of removing the affected part altogether when it is confirmed. The first of these indications is to be fulfilled by favoring the circulation of the blood as well as of the lymph, to which end scarification more or less deep should be practised, by which the tumefied tissues are released from pressure, and the formation of phlyctænulæ and islets of sphacelus are prevented. Should the flow of blood be so abundant as to be attended with danger, the wound should be plugged and pressure applied. General blood-letting is occasionally, though rarely, advisable. The administration of febrifuge drinks is always indicated. Attention to the cause of the imminent gangrene will enable the intelligent surgeon in some instances to prevent its occurrence. Thus, in one instance, Bourgeois did not hesitate to cut away a portion of the corona, when it constituted an invincible obstacle to the return of the constricted prepuce. The patient recovered with some eschars of the prepuce, and of the dorsum penis, in two months, though otherwise he might have lost the whole organ. When it has once fairly commenced, the application of the actual cautery is indicated. He records a case in which a young man, aged 24, came under his care with chancre complicated with gangrene of the penis. A slight cauterization stopped the progress of the gangrene, and twelve days afterwards he was well. Arsenic was formerly considered useful, but is now neglected, and in its place the local application of citric acid is largely employed. This acid limits the progress of the gangrenous sore, detaches the eschars, and converts the gangrenous into a simple wound which rapidly heals. When all these means fail and the gangrene still progresses, it only remains to remove the sphacelated part, but on this point opinions are by no means unanimous. Galen and Paré practised it freely, and lately M. Pétrequin, of Lyons, has

also adopted it. M. Demarquay, however, is not in favour of the adoption of this mode of treatment, for when it is limited to the skin of the penis or scrotum, the operation is superfluous; and when also it is produced by some external cause, the point where the gangrene will stop can be almost always predicated, whilst if produced by a constitutional condition, the wound made by the amputating knife is as likely to slough as the tissues in their natural state, and the treatment must therefore be constitutional. Finally, he refers to the camphorated creosote which has been recommended by M. Lavit, and the application of which has been followed by a good result. (*Archives Générales de Médicine*, May 1870.)

On the Local Treatment of Gastric Disease.—Dr. Theodore Jürgensen, of Kiel, contributes a paper to the *Deutsches Archiv* on this subject, remarking that the suggestion was originally due to Küssmaul, who adopted the pump constructed by Wyman, which has various disadvantages. Professor Bartel, of Frankfort, introduced this mode of treatment into his hospital, but not having a Wyman's pump, his assistant physician, Dr. Schorer, improvised a syphon pump, and M. Jürgensen has found that the pump may be dispensed with, the stomach being washed out and emptied on the principle of the syphon alone. It is only requisite to introduce a sound into the stomach, and attach its upper end with a piece of india-rubber tubing to the short arm of a glass syphon, the other end of which has a long portion of tubing attached to it. The patient being told to cough, or to make an effort at vomiting, the instrument, supposing the stomach to have been filled with fluid, immediately begins to play, and continues to act till the contents of the stomach are evacuated. By reversing the conditions, on the other hand, the stomach can be filled. In introducing the sound the mouth should be kept wide open, and as much saliva is usually secreted, the head should be bent forwards and the fluid allowed to flow away. No violence should be used. The washing out of the stomach with alkaline acid or spring water should be performed daily in the morning whilst the patient is fasting, and continue till the water flows out from the syphon quite clear. (*Deutsches Archiv für klinische Medicine*, 1870, Band ii. Heft ii.)

A western chemist has discovered a remedy for the trichina. It is nitro-glycerine, inserted either into the hog or the eater of pork, and then exploded.

Notes and Queries.

DEPARTMENT OF NEW INVENTIONS.

Analyses of various Samples of Potassium Bromide (*continued from p.* 318).—Five of the seven samples contained bromide, chloride, and iodide of potassium; two of them (Nos. VIII. and XIII.) were free from iodide. They all contain sulphate of potassium and sodium; and all, with the exception of two (Nos. X. and XIII.) contain also carbonate of potassium, the sulphate forming, as in the former samples, the greater part of the amounts given in the table under the heading of "other impurities." Two of them (Nos. IX. and XII.) contain traces of bromate. No other impurities were found in any of the samples.

Particulars of the Samples analysed.

No. VII. From P. Bolton, 251, Gray's Inn Road.—White, moderately large opaque crystals, dry. Contains slight traces of carbonate of potassium, and strong traces of sulphate of potassium and sodium.

No. VIII. From E. Voile and Co. 51, Judd street, Euston Road, W.C.—White, moderately large crystals, dry. Contains slight traces of carbonate of potassium, and of sulphate of potassium and sodium; is free from iodide and bromate.

No. IX. From Auguste Le Maout, 57, Princes street, Leicester Square.—White, moderately large crystals, dry. Contains slight traces of carbonate and sulphate of potassium and sodium; traces of bromate and iodide.

No. X. From John Carr, 171, High Holborn.—White, very large, some opaque, some translucent, dry. Contains only traces of sulphate of potassium.

No. XI. From S. Chaplin, 11, Tothill Street, Westminster.—Slightly yellow, large crystals, dry. Contains strong traces of carbonate, and slight traces of sulphate of potassium and sodium; minute traces of iodide; no bromate.

No. XII. From H. B. Spink, 2, Marsham Street, Westminster, S.W.—White, small crystals, dry. Contains traces of carbonate,

and sulphate of potassium and sodium; traces of iodide and 0·0015 per cent. of bromate of potassium.

No. XIII. From Fallowfield and Co., 36, Lower Marsh, Lambeth.—Slightly yellow, moderately large crystals, dry. Contains traces of sulphate of potassium and sodium; no iodate or bromate.

No.		Potassium.			
	Moisture.	Bromide.	Chloride.	Iodide.	Other impurities.
VII.	0·42	90 92	5·21	0 053	3·397
VIII.	0 85	91·43	4·38	0·000	3·330
IX.	0·75	89·84	8·06	0 026	1·324
X.	0 88	89 26	7·83	0·061	1·969
XI.	0 85	95·12	2·65	trace	1.380
XII.	1·04	90·87	5·14	0 031	2 919
XIII.	0 86	94·98	2·50	0 000	1.660

The Subcutaneous Pneumatic Aspirator.—An apparatus invented by Dr. Dieulafoy, and manufactured by Charrière, in Paris, and Weiss in London, promises to prove very useful, both for the diagnosis and treatment of collections of fluid, more especially in serous cavities. It consists of a glass pump-syringe, on the stomach-pump principle, but with an arrangement by which a vacuum can be created in the cylinder, which screws on to the perforating trocar. The bottom tap being opened when the (fine) exploring trocar reaches the cavity, the fluid rushes into the exhausted syringe, and we at once perceive its character. In a doubtful case, we use first an extremely fine trocar for diagnosis; if we elect to evacuate the fluid, we substitute for this a trocar of larger size, readjust the exhausted syringe, and by repeated manipulations extract the fluid without allowing the entrance of the least quantity of air to the cavity. The instrument resembles, in many respects, that of Dr. Bowditch.

A New Constant Battery.—Mr. Pratt has submitted to us some new constant batteries made by Stöhrer (modified Bunsen's), which will probably prove very useful in practice. As yet we have only tested one of these batteries, a 20-celled one, and this only for one purpose, namely, the treatment of neuralgia. For this purpose the battery is thoroughly effective, producing all the effects which can be obtained from the constant current. We had occasion to try it twice in the same day—upon our own person, and upon that of a patient; the current from 10 cells directed upon the branches of the trigeminal nerve in each

instance arrested severe pain in a few minutes. The characteristic galvanic flash and galvanic taste were produced in mild degree. The battery, being of zinc and carbon, is handy and gives little trouble.

CORRESPONDENCE.

Bromal Hydrate.—We have received several inquiries from correspondents as to the dose and mode of application of this new drug, which Liebreich, it appears; has been experimenting upon. We are in the awkward position of not being able to answer these queries, which is the more provoking as a specimen of the drug has come into our hands, and we are unable to commence experiments for want of preliminary information. We shall be obliged to any one who will inform us whether any account of the matter has yet been published in the German or French papers.

The Degree of Impurity of Commercial Bromide of Potassium.—A correspondent, "M.D," directs our attention to the discrepancy between the results of our analytical research on this subject, and one published in the *Lancet* by Dr. A. E. Davies. According to the latter analysis, the impurities of bromide as sold in the shops are far larger than any signalized in our analysis in the *Practitioner* for May; and one of the items of impurity, *bromate of potash*, is reported by Dr. Davies to be present in quantities which would be likely to produce most serious and mischievous effects. In our May series of analyses nothing of the kind was found, and our correspondent will observe that in the present number we publish fresh analyses of samples taken from shops even of a comparatively humble class, yet the total impurities observed are not large, and bromate never figures as more than a "trace." We cannot quite understand how Dr. Davies could have had such bad luck with the tradesmen he applied to, as our own samples were chosen quite promiscuously over a very wide field; but we think he certainly ought to publish the names of the delinquents.

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[1] Any of the foreign works may be procured by application to Kelly, Piet & Co., Publishers, Booksellers and Importers, 174 Baltimore Street, Baltimore.

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